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MINORITY PARTICIPATION IN HIGHER EDUCATION

Sol H. Pelavin
Michael B. Kane

August 1990

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U.S. DEPARTMENT OF EDUCATION • OFFICE OF PLANNING, BUDGET & EVALUATION

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Sol H. Pelavin
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August 1990

Prepared for:

Office of Planning, Budget, and Evaluation
U.S. Department of Education
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PREFACE

The purpose of this report is to describe minority students' participation in higher education and to discuss those factors which enhance and impede participation. To set an appropriate context for the current conditions, the report begins with analyses of important trends over a period of approximately the past 20 to 25 years. In examining trends, the selection of the years and data to be analyzed is critical, since a shift of only one or two years often can alter the interpretation of a trend. We have tried to avoid such problems by always reporting and analyzing all available data.

Data are not always available for the same periods of time. For example, some data may only be available from 1976, while other data may go back to 1966. Since we always report all available data, our analyses will not always be completely comparable. In addition, some data are only available for persons of one or two minority groups and not for other minority groups.

Analyses of these data will, therefore, not report on all minority groups and may appear incomplete. However, we prefer problems of non-comparable or incomplete analyses to those which arise from not using all the data which could further the report's description and analysis of minority students participation in higher education.

There are two periods in the recent history of higher education that are of particular importance from the perspective of minority enrollment in college. The first of these was the approximately twenty-year period between the end of World War II and the beginning of a significant effort

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to desegregate higher education. The second was the period from about 1964 to the present.

During the first period, enrollments in higher education grew at unprecedented rates. This growth was spurred on by the Federal government's involvement in supporting students' college education through the GI Bill as well as by the increasingly recognized link between economic success, both personal and national, and the creation and application of knowledge.

Minority enrollment also grew considerably during this period, particularly as a result of GI Bill funding. However, for the Black population, this growth occurred in a set of institutions that were not supported in a manner equivalent to those where white students were enrolled. In 1954 about 90 percent of Black students enrolled in higher education were enrolled in 106 small, historically Black colleges and universities (HBCUs). At that time the Supreme Court struck down the ruling that had permitted the exclusion of Blacks from the major institutions of higher education in the states where the majority of the HBCUs and Black students were located. However, it was another 10 years before significant desegregation of higher education began to take place.

In the mid-1960s several events ushered in the second period of importance for this report. In 1964 Congress passed the Civil Rights Act which led eventually to the dismantling of the dual systems of higher education that had survived in many states into the 1970s. Shortly thereafter the Higher Education Act of 1965 was passed and funding began for programs of student aid to promote access to higher education for students from low income families as well as for institutional aid to strengthen the HBCUs.

In the main, when this report takes an historical perspective, it is the period of the past twenty to twenty-five years that will be covered. Occasionally, the report will reach back further, to 1954 if possible and appropriate. Our ability to do so is limited by the availability of data.

The study reported herein relies exclusively upon extant data. The collection of new data was considered beyond the scope of work for this study, and, therefore, was not done. The study combines syntheses of prior research with the results of new analyses of previously collected data. Therefore, the study is constrained by the scope of data available on educational participation and decision making among minorities. Extant data are not available for all minority groups for all years of interest. The report will, therefore, address trends for minorities in general, and where possible, for specific minority groups for whatever years data are available for a particular analysis.

Data to support the analyses reported are presented in the following ways: wherever practicable the data have been used to generate graphic representations of the phenomena being reported -- these figures are included in the body of the text; data that are not overly broad in scope are tabulated and are also included in the text; to enhance readability, larger tabulations of data that support either the figures in the text or, occasionally, simply narrative reporting, have been collected in a technical appendix which follows the conclusion of the report.

The report is comprised of four chapters. Two chapters focus on the aggregate impact of individual choices and behaviors in college attendance

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while the other two chapters look at institutional practices related to the participation of minority students in higher education. Chapter 1 describes trends in minority enrollment and degree attainment at the undergraduate and graduate levels. Chapter 2 is about two types of IHEs that, together, enroll a substantial portion of the minorities who pursue a college education; the historically Black colleges and universities and urban community colleges. Chapter 3 again focuses on individuals and reviews data and other information associated with a variety of factors that have been hypothesized to account for the relatively lower college participation rates of minority groups as compared to whites. Chapter 4 concludes the report with a review of various programs that institutions have developed to enhance minority student preparation, enrollment and continuation in college.

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CHAPTER 1

TRENDS

Overview

This chapter describes trends in minority enrollment and degree attainment in colleges at the undergraduate and graduate level. It begins with a brief discussion of overall trends and projections in U.S. population from 1950-2025. A key finding of that context setting discussion is that:

- The percent of the college-age population which is minority has been increasing steadily since 1950 and is projected to reach about the 40 percent level by 2025.

Within that context, trends in minority high school graduation and enrollment in college from 1964-1988 are reviewed by analyzing data from the U.S. Census Bureau's Current Population Survey (CPS) and the U.S. Department of Education's National Center for Education Statistics' Higher Education General Information Survey (HEGIS), and the Integrated Postsecondary Education Data System (IPEDS). Analyses of these data indicate that high school graduation and college enrollment have increased substantially over the past 24 years for Black persons. For Hispanic persons, the analyses indicate that over the past 16 years, high school graduation has increased only slightly while increases in college enrollment are more significant. Specifically:

- High School graduation rates of Black persons 18 to 24 years old have increased dramatically from 56 percent in 1967 to 75 percent in 1988. Rates for Hispanic persons have increased only from 52 percent in 1972 to 55 percent in 1988;
- The number of persons 18 to 24 years old enrolled in college has increased significantly from 1964 to 1988. During this period,

- White enrollment has increased from 3.3 million in 1964 to 6.6 million in 1988;
- Black enrollment has increased from 157,000 in 1964 to 752,000 in 1988;

o During a somewhat shorter period of time,

- Hispanic enrollment has increased from 179,000 in 1972 to 450,000 in 1988;

o The proportion of each group enrolled in college has also increased from 1964 to 1988. For persons 18 to 24 years old,

- White enrollment increased from 22 percent in 1964 to 31 percent in 1988;
- Black enrollment increased dramatically from 8 percent in 1964 to 21 percent in 1988. This increase is a significant accomplishment when it is considered that the size of the population cohort itself increased 85 percent during the same period; and
- Hispanic enrollment increased from 13 percent in 1972 to 17 percent in 1988.

o The percent of 18 to 24 year old high school graduates enrolled in college,

- Varied for whites, since 1967, usually between 31 and 35 percent;
- Increased for Blacks from 23 percent in 1967 to 28 percent in 1988; and
- Increased for Hispanics from 26 percent in 1972 to 31 percent in 1988.

However, despite these positive long-term trends, for both Blacks and Hispanics, the percent of 18 to 24 year old high school graduates enrolled in college was higher in 1976 (33.5 and 35.8, respectively) than in any subsequent year. The causes of these high rates, or subsequent decline from 1976 to 1980, cannot be clearly determined. Speculation about the high rates include the possibility returning Vietnam veterans were using G.I. Bill benefits, that there was an increase in the attractiveness of college for minorities or that the increase was actually a statistical anomaly. However, there are no data available to permit a careful testing of any of these explanations. From 1980 through 1988 the percentages of Black and Hispanic high school graduates enrolled in college have remained relatively stable, at about 28 and 30 percent, respectively.

An area in which there has been no significant change between 1976 and 1988 is in the distribution of minority students across the types of IHEs:

o Minority students generally attend two-year public institutions more frequently than any other type of college (public four-year, or private two- or four-year); however, both Black and Asian students attend four-year public schools at about the same rate as they attend two-year public schools.

When college enrollment trends among whites and minorities 18 to 24 years old are broken down by sex, different patterns emerge across the groups. Since about 1973, the enrollment of white males has remained relatively stable at about 29 percent. White females, however, rose from about 16 percent in 1964 to 31 percent in 1988--an increase of 94 percent. Among Black persons, there was little difference over time in rates of enrollment between males and females until 1988. Both groups increased from eight percent in 1964 to about 23 percent in 1987. In 1988, a substantial difference between Black males and females occurred--enrollment of Black males decreased to 18 percent, while female enrollment increased to 24 percent. (It is important to note that it is too early to tell if this difference will persist over time.)

Among Hispanic persons, female enrollment has risen from 12 percent in 1972 to 18 percent in 1988. During the same period of time, male enrollment has increased only slightly, going from 15 percent in 1972 to 17 percent in 1988.

Completion rates among both whites and minorities in the college-going population are appreciably behind enrollment levels. Analyses of minority bachelor's degree attainment indicate that:

- The percent of persons aged 25 to 34 years old among each minority group completing four or more years of college has increased--for Blacks from 4.9 percent in 1964 to 12.3 percent in 1987 and for Hispanics from 3.2 percent in 1974 to 9.8 percent in 1987. While these increases are encouraging, minority rates remain significantly below the white rate of 25.1 percent.

- Further, data from the Department of Education's annual surveys of IHEs indicate that the number of bachelor's degrees actually awarded decreased between the 1976-1977 school year and the 1986-87 school year by almost four percent among Black students while increasing 44 percent among Hispanic students, 136 percent among Asian and Pacific Islanders, and 19 percent among American Indian/Alaskan Natives. Among white students the number of degrees awarded increased four percent over the same period.

Within graduate and first-professional study, the proportion of enrollment comprised of minority students is less than the proportion of undergraduate enrollment which is minority. These differences in overall minority enrollment have been reduced somewhat over the past 10 years, primarily through an increase in professional school enrollment. However, the changes are not uniform:

- Overall graduate and first-professional enrollment went up by 16 percent from 1976 to 1986; white enrollment rose nine percent, while total minority enrollment went up 44 percent.

- The number of Black students enrolled in graduate school did not increase from 1976 to 1986, however Black enrollment in first-professional school rose 27 percent over the same period;

- Growth in graduate and first-professional level enrollment among Asian American and Hispanic students accounts for much of the overall increase in enrollment at these levels between 1976 and 1986--21.9 percent of graduate level enrollment increases and 42.3 percent of professional school enrollment increases.

For all groups, graduate degree attainment is appreciably lower than graduate enrollment. In fact, when all groups are taken together, degree attainment decreased between 1977 and 1987, while enrollment increased. Data show that:

- **The number of master's degrees conferred on Blacks fell 34 percent from 1977 to 1987, while the number increased for Hispanics (16 percent), Asian Americans (67 percent), and American Indians (14 percent). Among whites, master's degree attainment fell by 14 percent over the same period.**
- **The decline in master's degree attainment among Blacks was primarily in the fields of education, social/behavioral sciences, and humanities. During the same period, the number of Blacks receiving master's degrees in business and science/technology fields rose about five percent. The declines in master's degree attainment among whites were in the same fields as the declines among Blacks.**
- **Doctoral degree attainment followed the same pattern, falling for whites and Blacks, though not so steeply as for master's degrees, and rising for other groups. Among whites the decline was in all fields including business and science/technology.**

Introduction

It is important to review the expected trends in the U.S. population as a context for this report's examination of the participation of minorities in college. There are clear changes occurring in the makeup of the U.S. population. While the total population currently is not growing very rapidly--only about 11 percent growth is expected over the next 35 years--its composition is changing. Those changes have implications for college and university participation rates.

Between the end of World War II and the passage of the Civil Rights Act of 1964, nearly 70 million Americans were born. In the main, this group, which was mostly white, has completed its postsecondary education during a period of phenomenal growth and change in the composition of postsecondary institutions. In 1946, for example, there were approximately 1,800 Institutions of Higher Education (IHEs) in the United States. Today there are approximately 3,587.[1] In 1946, minority students represented only three percent of postsecondary enrollment. By 1986, their representation had increased to almost 18 percent. In 1946, women comprised 30 percent of postsecondary enrollment. In 1986, they constituted 52.9 percent. Further, students who are older than the "traditional college age" student constitute 39 percent of college enrollment today.

Hodgkinson (1985) suggests that the next two decades will see changes nearly as dramatic as those experienced when the "baby boomers" entered the educational system. Table 1.1 displays the estimated proportion of minority persons in the U.S. college-age population (persons 18 to 24 years old) between the years 1950 and 2025. The table indicates that:

- The percent of the college-age population which is minority has been steadily increasing since 1950; and
- By 2025 minorities are projected to constitute almost 40 percent of the college-age population.

California has made similar projections of its population growth which are displayed in Figure 1.1. The projections indicate that the college-age population of California, which was one-third minority in 1980, is expected to be from 42 to 45 percent minority by the year 2000. Texas, Florida, and New York are experiencing a similar phenomenon.

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[1] Includes branch campuses.

Table 1.1

ACTUAL AND PROJECTED COLLEGE-AGE POPULATION (18-24)
FOR SELECTED YEARS: 1950-2025
(in thousands)

YEAR	TOTAL	WHITE	MINORITY	PERCENT
1950	16,075	14,186	1,889 *	11.8 *
1960	16,128	14,169	1,959 *	12.1 *
1970	24,712	21,532	3,180 *	13.0 *
1975	27,735	23,775	3,959 *	14.3 *
1980	30,081	25,415	4,666 *	15.5 *
1985	28,715	21,491	7,224	25.2
1990**	25,777	18,768	7,009	27.2
1995**	23,684	16,753	6,931	29.3
2000**	24,590	17,062	7,528	30.6
2025**	25,447	15,468	9,979	39.2

* Does not include Spanish-origin population if they were classified as "white" rather than "Black and other" in the survey data.

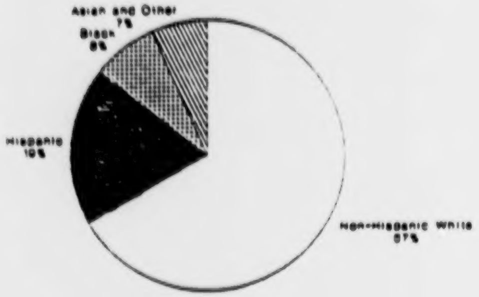
** Projection

NOTE: Minority 1985-2025 arrived by subtracting "Spanish-origin" from "white" and redistributing to "Black and other."

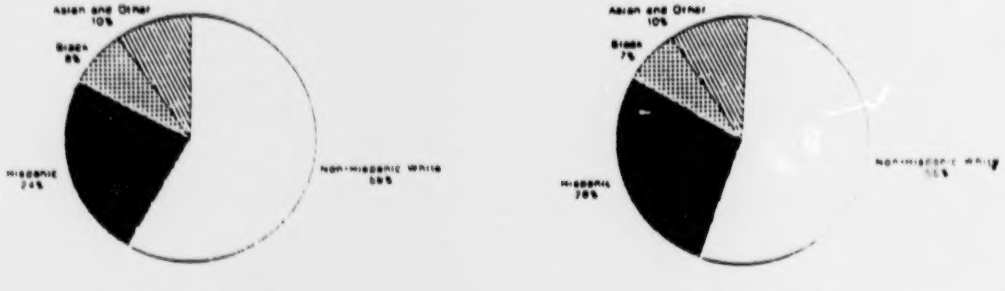
SOURCE: Derived from James R. Mingle. Focus on Minorities: Trends in Higher Education. Education Commission of the States, 1987.

Figure 1.1
California Population by Race/Ethnicity: 1980 and 2000*

1980



2000



Lower Alternative

Higher Alternative

* Projections

Source: Projections of the Hispanic Population for California, 1985-2000. Center for Continuing Study of the California Economy, 1982.
From: The California State University. Educational Equity in the California State University-- Which Way the Future?, 1986

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The U.S. Department of Labor also anticipates dramatic changes in the composition of the nation's population. The Department of Labor estimates that minorities "will make up 29 percent of the new entrants to the labor force between now and the year 2000, twice their current share of the workforce" (DOL, 1987, p. xx).

During the 40 years following the end of World War II (1945-1985) the nation has experienced a dramatic increase in the percent of its population entering and completing college. During the next 40 years (1985-2025) the nation will experience a significant increase in the percent of its college-age population that is minority. In the context of this expected increase, this chapter reviews recent trends in minority students' college and university enrollment and degree attainment.

Trends in College Enrollment

To investigate fully the trends in minority enrollment in institutions of higher education (IHEs), data from the following two sources are needed:

- The U.S. Census Bureau's October school enrollment supplement to the Current Population Survey (CPS); and
- The U.S. Department of Education's National Center for Education Statistics' Higher Education General Information Survey (HEGIS) and Integrated Postsecondary Education Data System (IPEDS) fall enrollment surveys.

Data from the CPS allow analysis of college enrollment trends among persons who are of white, Black, and Hispanic origin by age and sex. (Persons classified as Hispanic in these data may be of either race. Data for white and Black persons were not adjusted to eliminate double counting of Hispanic persons; data are reported herein exactly as they were reported by the Census Bureau.) Since most of these CPS data are available annually since 1964, trends may be analyzed over a period of 24 years, i.e., from 1964 through 1988.[2] This period of time is significant since it begins at about the same time as the enactment of the 1964 Civil Rights Act and the passage of the 1965 Higher Education Act. However, CPS data do not contain any information regarding the enrollment of, or the type of college attended by, other minorities, e.g., Asian Americans and American Indians.

Data from the HEGIS/IPEDS contain enrollment information for the following four groups of minority students as well as non-Hispanic whites: Black, non-Hispanics; Hispanics; Asians or Pacific Islanders; and American Indian/Alaskan Natives. For each of these groups, HEGIS/IPEDS data can be used for analysis of enrollment trends by type of institution: two- or four-year college and public or private control. However, these HEGIS/IPEDS data are only available biennially from 1976. Thus, creating the most complete picture of minority enrollment trends available requires analysis of data from both the CPS and the HEGIS/IPEDS.

High School Graduation

Figure 1.2 uses data from the October CPS to show the percent of persons 18 to 24 years old graduating from high school by race/ethnicity from 1967 (the first year these data were available) through 1988. High school graduation rates are included because a high school diploma is typically considered a prerequisite to enrollment. In addition, it is often assumed that, if high school graduation rates increase, the rate of

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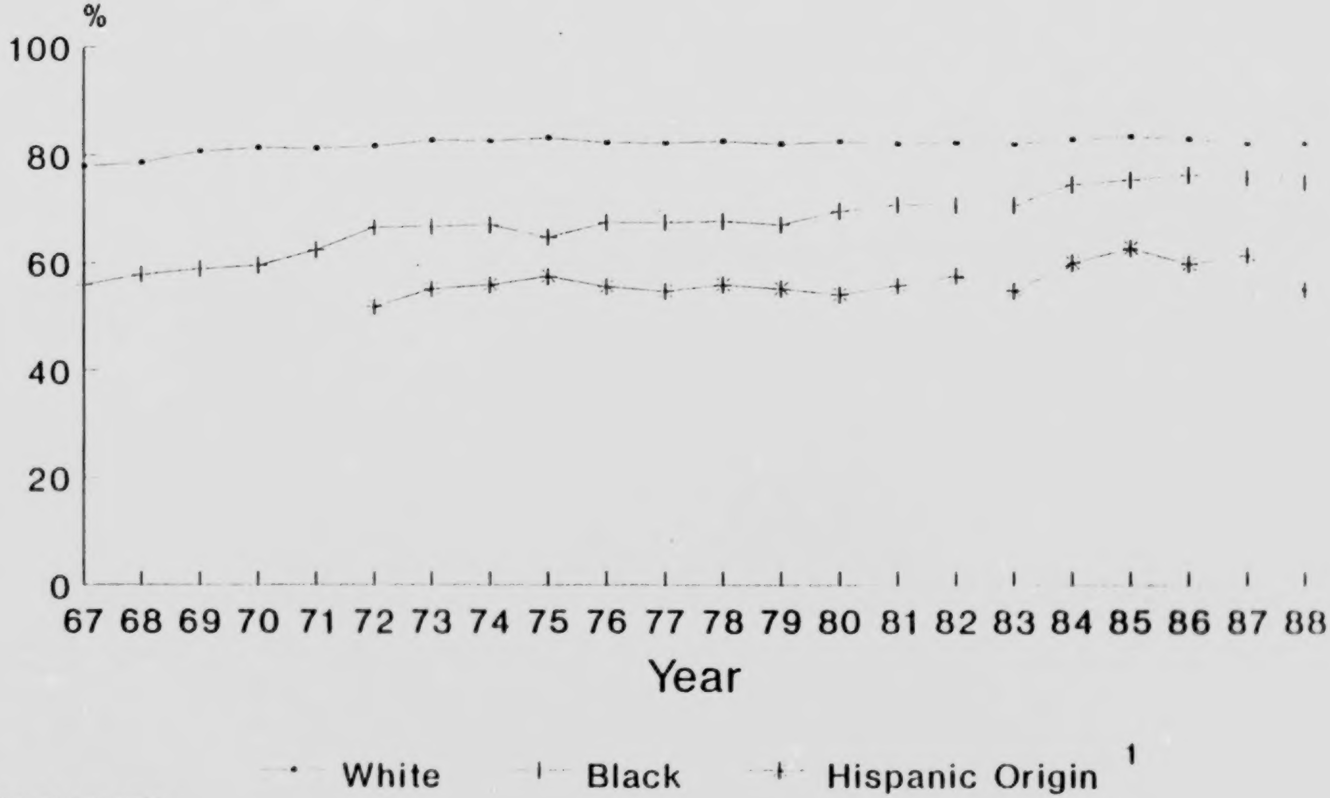
[2] We began our analysis of CPS data with 1964 because prior to 1964 data by race were not available.

Figure 1.2 Percent of Persons 18-24 Yrs Old Graduating From High School by Race/ Ethnicity: October 1967 to October 1988



[1] May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, "School Enrollment - Social and Economic Characteristics of Students: October (various years)."

college enrollment will also increase. This assumption will be investigated in the next section.

The data in Figure 1.2 indicate that the percent of persons 18 to 24 years old who complete high school has increased substantially for white and Black persons. In particular, from 1967 to 1988, the high school graduation rate:

- For whites has increased from 78 to 82 percent; and
- For Blacks has increased from 56 to 75 percent.

The data for persons of Hispanic origin who may be either white or Black are only available from 1972. During the period from 1972 to 1988, the high school graduation rate:

- For Hispanics has increased only from 52 to 55 percent.

The increase in the high school graduation rates of Blacks is significant. However, it is important to note the Black graduation rate does not yet equal that of the white population (82 percent). In addition, the high school graduation rates of white and Hispanic persons remain far apart.

College Enrollment

Increases in the number of persons of age 18 to 24 years old entering college are also dramatic. CPS data contained in Table 1.2 show that, from 1964 to 1988, the number of white persons enrolled in college has increased from 3.3 million to 6.6 million persons. During this same period Black enrollment has increased from approximately 157,000 to 752,000 persons. As previously noted, data for persons of Hispanic origin of either race are only available from 1972. However, even in just the period

Table 1.2

High School Graduation and College Enrollment of Persons 18 to 24 Years Old By Race/Ethnicity: October 1967 to 1988 (in thousands)

Race/Year	All 18-24* Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
White						
1988	21,261	17,491	82.3%	6,659	31.3%	38.1%
1987	21,493	17,689	82.3	6,483	30.2	36.6
1986	22,020	18,291	83.1	6,307	28.6	34.5
1985	22,632	18,916	83.6	6,500	28.7	34.4
1984	23,347	19,373	83.0	6,526	28.0	33.7
1983	23,899	19,643	82.2	6,463	27.0	32.9
1982	24,206	19,944	82.4	6,594	27.2	33.1
1981	24,486	20,123	82.2	6,549	26.7	32.5
1980**	24,482	20,214	82.6	6,423	26.2	31.8
1979	23,895	19,616	82.1	6,120	25.6	31.2
1978	23,650	19,526	82.6	6,077	25.7	31.1
1977	23,430	19,291	82.3	6,209	26.5	32.2
1976	23,119	19,045	82.4	6,276	27.1	33.0
1975	22,703	18,883	83.2	6,116	26.9	32.4
1974	22,141	18,318	82.7	5,589	25.2	30.5
1973	21,766	18,023	82.8	5,438	25.0	30.2
1972	21,315	17,410	81.7	5,624	26.4	32.3
1971	20,533	16,693	81.3	5,594	27.2	33.5
1970	19,608	15,960	81.4	5,305	27.1	33.2
1969	18,606	15,031	80.8	5,347	28.7	35.6
1968	17,951	14,127	78.7	4,929	27.5	34.9
1967	17,500	13,657	78.0	4,708	26.9	34.5
1966	17,125	N/A	N/A	4,606	26.9	N/A
1965	16,505	N/A	N/A	4,213	25.5	N/A
1964	15,308	N/A	N/A	3,369	22.0	N/A
Black						
1988	3,568	2,680	75.1	752	21.1	28.1
1987	3,603	2,739	76.0	823	22.8	30.0
1986	3,653	2,795	76.5	812	22.2	29.1
1985	3,716	2,810	75.6	734	19.8	26.1
1984	3,862	2,885	74.7	786	20.4	27.2
1983	3,865	2,740	70.9	741	19.2	27.0
1982	3,872	2,744	70.9	767	19.8	28.0
1981	3,778	2,678	70.9	750	19.9	28.0
1980**	3,721	2,592	69.7	715	19.2	27.6

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* Civilian noninstitutional population.

** Data for 1980 and all later years use 1980 Census-based estimates.

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Table 1.2 (Continued)

High School Graduation and College Enrollment of Persons 18 to 24 Years Old
By Race/Ethnicity: October 1967 to 1988
(in thousands)

Race/Year	All 18-24* Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
Black, continued						
1979	3,510	2,356	67.1%	696	19.8%	29.5%
1978	3,452	2,340	67.8	694	20.1	29.7
1977	3,387	2,286	67.5	721	21.3	31.5
1976	3,315	2,239	67.5	749	22.6	33.5
1975	3,213	2,081	64.8	665	20.7	32.0
1974	3,105	2,083	67.1	555	17.9	26.6
1973	3,114	2,079	66.8	498	16.0	24.0
1972	2,986	1,992	66.7	540	18.1	27.1
1971	2,866	1,789	62.4	522	18.2	29.2
1970	2,692	1,602	59.5	416	15.5	26.0
1969	2,542	1,497	58.9	407	16.0	27.2
1968	2,421	1,399	57.8	352	14.5	25.2
1967	2,283	1,276	55.9	297	13.0	23.3
1966	2,214	N/A	N/A	224	10.1	N/A
1965	2,041	N/A	N/A	210	10.3	N/A
1964	1,930	N/A	N/A	157	8.1	N/A
Hispanic Origin***						
1988	2,642	1,458	55.2	450	17.0	30.9
1987	2,592	1,597	61.6	455	17.6	28.5
1986	2,514	1,507	59.9	458	18.2	30.4
1985	2,221	1,396	62.9	375	16.9	26.9
1984	2,018	1,212	60.1	362	17.9	29.9
1983	2,025	1,110	54.8	349	17.2	31.4
1982	2,001	1,153	57.6	337	16.8	29.2
1981	2,052	1,144	55.8	342	16.7	29.9
1980**	2,033	1,099	54.1	327	16.1	29.8
1979	1,754	968	55.2	292	16.6	30.2
1978	1,672	935	55.9	254	15.2	27.2
1977	1,609	880	54.7	277	17.2	31.5
1976	1,551	862	55.6	309	19.9	35.8
1975	1,446	832	57.5	295	20.4	35.5
1974	1,506	842	55.9	272	18.1	32.3
1973	1,285	709	55.2	206	16.0	29.1
1972	1,338	694	51.9	179	13.4	25.8

*** May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (various years)."

from 1972 to 1988, Hispanic enrollment has increased substantially from approximately 179,000 to 450,000 persons.

Results of analyses of HEGIS/IPEDS data, which are contained in Table 1.3, are consistent with findings from CPS for the period 1976 to 1986. Data in Table 1.3 show college enrollment by race/ethnicity, biennially, from Fall 1976 through Fall 1986. These data indicate that:

- Total minority enrollment has increased from 1.691 million in 1976 to 2.235 million in 1986;
- All minority groups increased their enrollments during this period:
    - Black enrollment increased by five percent, from 1.033 to 1.080 million;
    - Hispanic enrollment increased by over 60 percent, from 384,000 to 617,000;
    - Asian or Pacific Islander enrollment increased by over 125 percent, from 198,000 to 448,000; and
    - American Indian/Alaskan Native enrollment increased by almost 20 percent, from 76,000 to 90,000.

For the period 1976 to 1988, the CPS enrollment data for persons 18 to 24 years old show an increase in Black enrollment of less than one percent and an increase in Hispanic enrollment of about 46 percent.

Since the proportion of the population that is minority is increasing, it is important to analyze college enrollment trends in terms of the percent of the minority group that is enrolled in college. Figure 1.3 contains the percent of all persons 18 to 24 years old enrolled in college by race/ethnicity, annually, from 1964 through 1988. These data indicate that:

- There has been a substantial increase in the percent of Black persons 18 to 24 years old enrolled in college, rising from eight percent in 1964 to 21 percent in 1988;

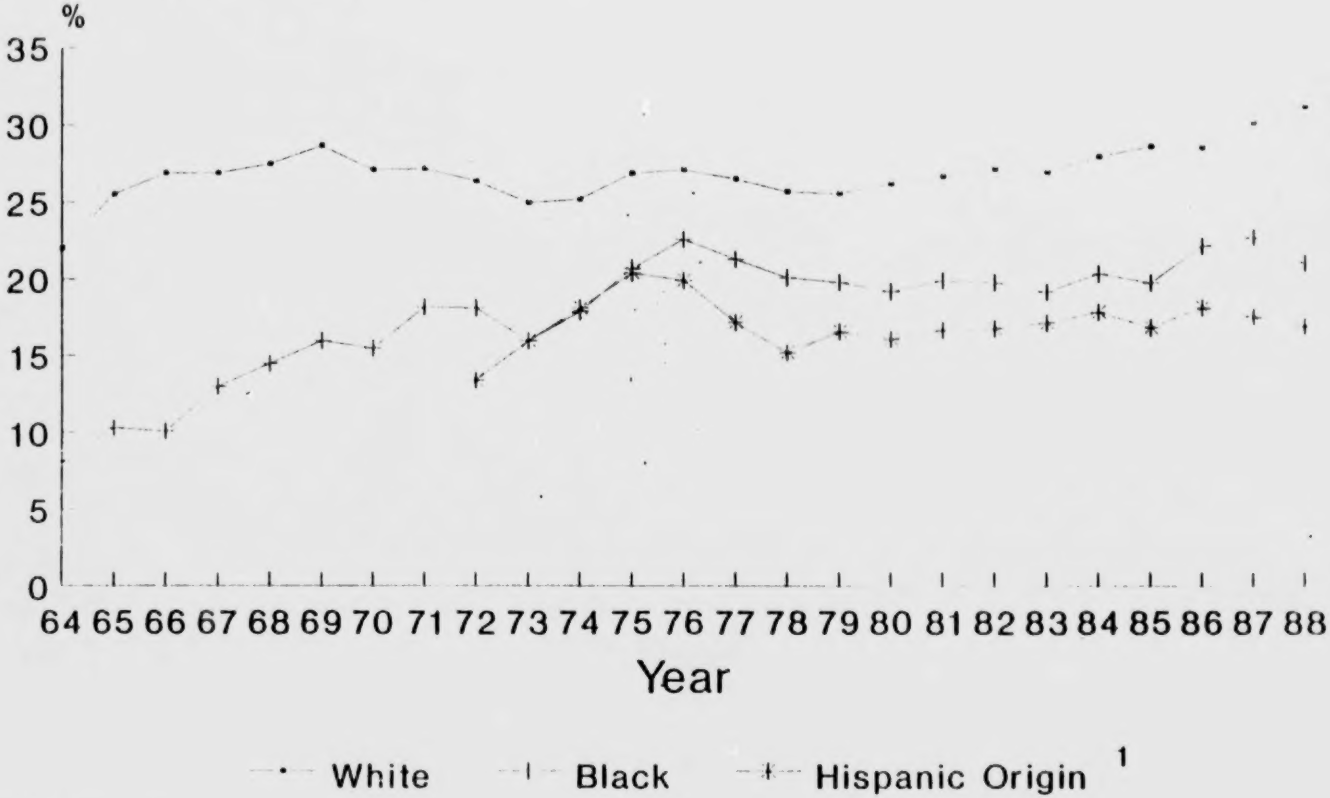
Table 1.3

Total Enrollment in IHEs by Race/Ethnicity: Biennially, Fall 1976 to 1986 (in thousands)

Race/Ethnicity of Student	1976	1978	1980	1982	1984	1986	1976-86 (Percent Increase)
White, non-Hispanic	9,076	9,194	9,833	9,997	9,815	9,911	9
Total Minority	1,691	1,785	1,949	2,059	2,085	2,235	32
Black, non-Hispanic	1,033	1,054	1,107	1,101	1,076	1,080	5
Hispanic	384	417	472	519	535	617	61
Asian or Pacific Islander	198	235	286	351	390	448	126
American Indian/ Alaskan Native	76	78	84	88	84	90	18
Nonresident Alien	219	253	305	331	335	344	57
Total Enrollment	10,986	11,231	12,087	12,388	12,235	12,489	14

Source: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Higher Education, (various years).

Figure 1.3 Percent of Persons 18-24 Yrs Old Enrolled in College by Race/ Ethnicity: October 1964 to October 1988



[1] May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, "School Enrollment - Social and Economic Characteristics of Students: October (various years)."

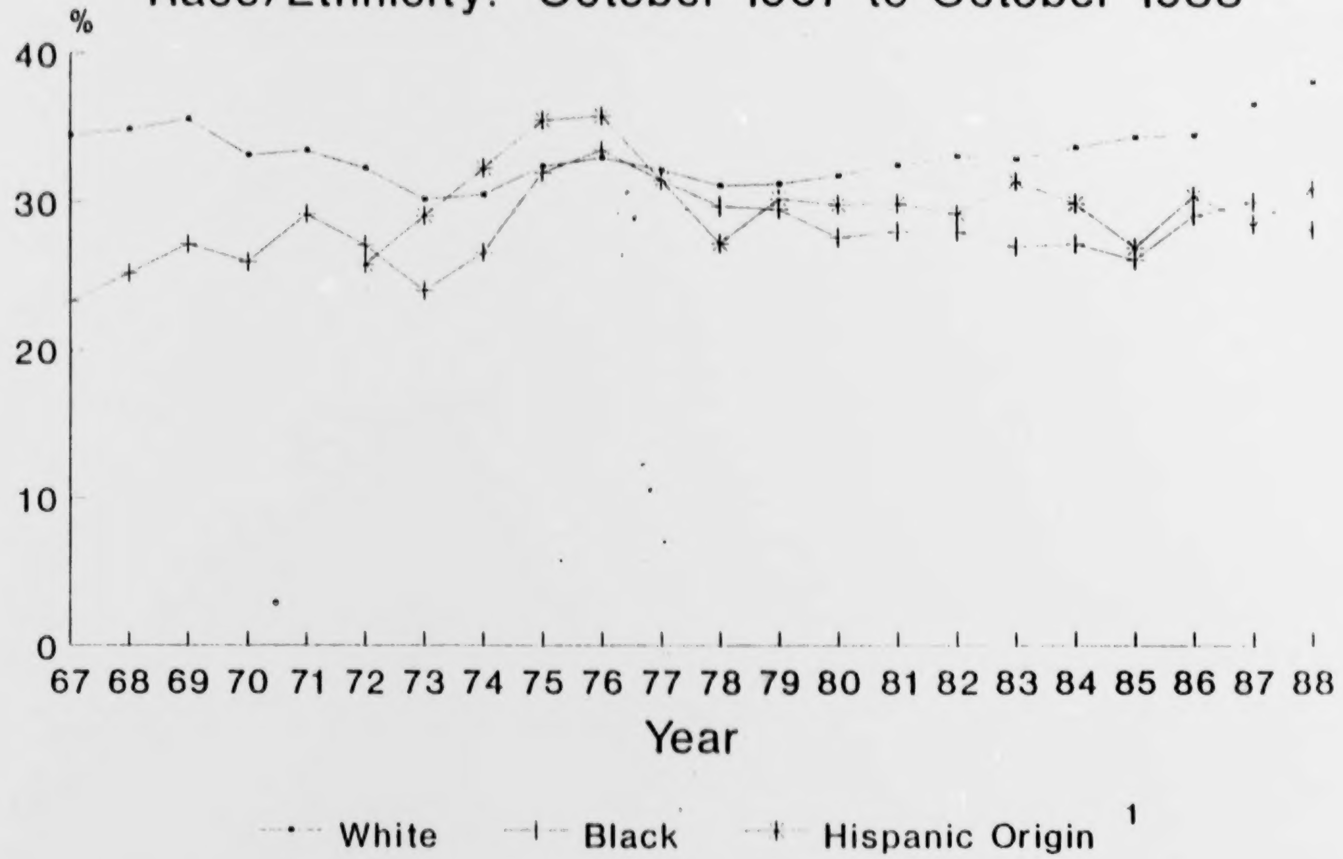
- Although not as large as the increase among Black persons, there has been an increase in the percent of Hispanic persons 18 to 24 years old enrolled in college, rising from about 13 percent in 1972 to 17 percent in 1988. The current enrollment rate is below the peak years of 1975 and 1976 when enrollment reached about 20 percent; and
- The percent of white persons enrolled in college has increased from 22 percent in 1964 to 31 percent in 1988.

In 1964, the gap between the percent of white and Black persons 18 to 24 years enrolled in college was 14 percentage points. By 1988, the gap between white and Black enrollment rates was reduced to 10 percentage points, a reduction of 29 percent of the 1964 gap. Thus, although the Black enrollment rate is still significantly below the white rate, the gap between the rates has substantially decreased over the past 24 years.

A third and final way to analyze college enrollment trends is to analyze the percent of each minority group's high school graduates who are enrolled in college. Figure 1.4 contains the percent of persons 18 to 24 years old who are high school graduates and are enrolled in college by race/ethnicity, annually, from 1967 through 1988. These data indicate that:

- The percent of Black persons 18 to 24 years old who are high school graduates enrolled in college has increased from 23 percent in 1967 to 28 percent in 1988. However, 28 percent is below the historically high rate of 34 percent achieved by this group in 1976.
- The percent of Hispanic persons 18 to 24 years old who are high school graduates enrolled in college has increased from 26 percent in 1972 to almost 31 percent in 1988. However, 31 percent is below the historically high rates of 36 percent achieved by this group in 1975 and 1976.
- From 1967 to 1988, the percent of white persons 18 to 24 years old who are high school graduates enrolled in college varied, ranging, for the most part, between 31 and 35 percent, with the highest rates occurring in 1987 and 1988 (37 and 38 percent historically).

Figure 1.4 Percent of 18-24 Yr Old High School Graduates Enrolled in College by Race/Ethnicity: October 1967 to October 1988



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[1] May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, "School Enrollment - Social and Economic Characteristics of Students: October (various years)."

From 1975 through 1979, the percent of 18 to 24 year old Black high school graduates attending college was higher than at any other period of time. Black enrollment peaked at 33.5 percent in 1976 when it exceeded the white enrollment rate of 33 percent. The percent of 18 to 24 year old Hispanic high school graduates attending college also peaked in 1976 at 35.8 percent, exceeding the rates for both white and Black persons that year. Since 1980, Black and Hispanic enrollment has appeared relatively stable at about 28 percent and 30 percent, respectively.

Peak Years or "Bubble"? 1975-1976

The percent of Black persons 18 to 24 years old enrolled in college increased relatively steadily from 1964 to 1975. The percent of Black 18 to 24 year old high school graduates enrolled in college also increased steadily from 1967 to 1976. Similar trends are observable for Hispanic persons 18 to 24 years old over a shorter period of time, 1972 to 1976 (the only years for which data are available). From 1976 to 1980 all rates decreased and from 1980 to 1988 the rates have remained fairly stable with an overall increase noted in 1986. These patterns can be seen in the data contained in Table 1.2, High School Graduation and College Enrollment of Persons 18 to 24 Years Old by Race/Ethnicity: October 1964 to 1988.

The causes of the high college attendance rates for Black and Hispanic persons during the period 1975 to 1979 have not been clearly determined. While some see the period following 1976 as a decline, others suggest that the period of 1975 to 1976 was actually an anomaly, a "bubble" in an otherwise fairly steady trend upwards over a period of more than two decades of growth in minority enrollment in college. Unfortunately, there are not sufficient data to definitively explain what caused the dramatic rises from 1974 to 1976 or to determine if it was an increase that should have been sustained, a short-term anomaly, or a statistical artifact.

Speculation on the possible explanations for the increase in minority college enrollment include Vietnam veterans using their G.I. Bill benefits and an increase in the attractiveness of college for Black and Hispanic students. However, there are no data available to permit a careful testing of either of these explanations. The Veterans Administration did not keep records by race/ethnicity before 1980 and there are no national longitudinal studies of the attractiveness of college to minorities.

The Bureau of the Census has speculated on causes of the apparent decline after 1975.

> . . . Other changes have occurred since 1975 that provide a more complete perspective from which to analyze these enrollment trends: for Blacks 18 to 21 years old, there was a 10 percentage point decline in the proportion who were high school dropouts (to 17 percent in 1985 which brought the dropout proportion close to that for Whites). There was also a complementary 10 percentage point increase in the pool of high school graduates from which college enrollees are drawn, to 71 percent of the age group (table F)[3] Of those high school graduates, only the proportion who were not enrolled in college also rose; the proportion of the age group enrolled in college did not change--it remained at 25 percent. In other words, the higher proportion completing high school combined with no change in the college-going rate had the effect of lowering the percentage of graduates who went on to college.
>
> For whites, there was less change in the decade [1975 to 1985]: 81 percent of 18- to 21-year-olds were high school graduates in both years, the proportion enrolled in college rose 4 percentage points to 39 percent in 1985, and the proportion who were dropouts decreased slightly.
>
> Among Hispanics, the proportion of 18- to 21-year-olds who were dropouts was substantially larger than for the other groups. The proportions enrolled in high school and college were not

---

[3] Table F is contained in Figure 1.5.

FIGURE 1.5

TABLE F. ENROLLMENT STATUS OF PERSONS 18 TO 21 YEARS OLD BY RACE HISPANIC ORIGIN AND SEX: OCTOBER 1985 AND 1975 FROM SCHOOL ENROLLMENT-SOCIAL AND ECONOMIC CHARACTERISTICS OF STUDENTS: OCTOBER 1985 AND 1984

(Numbers in thousands)

Sex, race, and Hispanic origin	1985						1975					
	–	Percent						Percent				
				High school graduate						High school graduate		
	Number	Total	Enrolled in high school	In college	Not in college	High school dropout	Number	Total	Enrolled in high school	In college	Not in college	High school dropout
Both Sexes												
All races	14,883	100.0	6.0	37.1	42.8	14.1	15,693	100.0	5.7	33.5	44.5	16.3
White	12,349	100.0	5.1	38.8	42.5	13.6	13,448	100.0	4.7	34.6	46.0	14.7
Black	2,149	100.0	11.1	24.8	46.6	17.5	1,997	100.0	12.5	24.9	35.6	27.0
Hispanic (of any race)	1,144	100.0	10.6	22.3	37.8	29.3	899	100.0	12.0	24.4	32.8	30.8
Men												
All races	7,260	100.0	7.5	36.7	40.3	15.6	7,584	100.0	7.4	35.4	41.3	15.9
White	6,069	100.0	6.2	38.1	40.5	15.2	6,545	100.0	6.2	36.9	42.8	14.1
Black	1,017	100.0	14.3	25.7	41.1	19.1	911	100.0	15.9	23.9	31.1	29.0
Hispanic (of any race)	551	100.0	11.6	17.6	32.7	37.7	416	100.0	17.3	25.2	29.3	27.9
Women												
All races	7,623	100.0	4.7	37.5	45.2	12.6	8,109	100.0	4.2	31.8	47.4	16.6
White	6,280	100.0	3.9	39.5	44.5	12.0	6,903	100.0	3.2	32.4	49.0	15.3
Black	1.132	100.0	8.3	24.0	51.6	16.1	1,085	100.0	9.7	25.8	39.2	25 4
Hispanic (of any race)	594	100.0	9.6	26.4	42.4	21.4	484	100.0	7.6	23.6	35.7	33.1

Source: U.S. Department of Commerce, U.S. Bureau of the Census. Current Population Reports, Series P-20, No. 426.

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different from those for Blacks (table F) (U.S. Bureau of the Census, 1988).

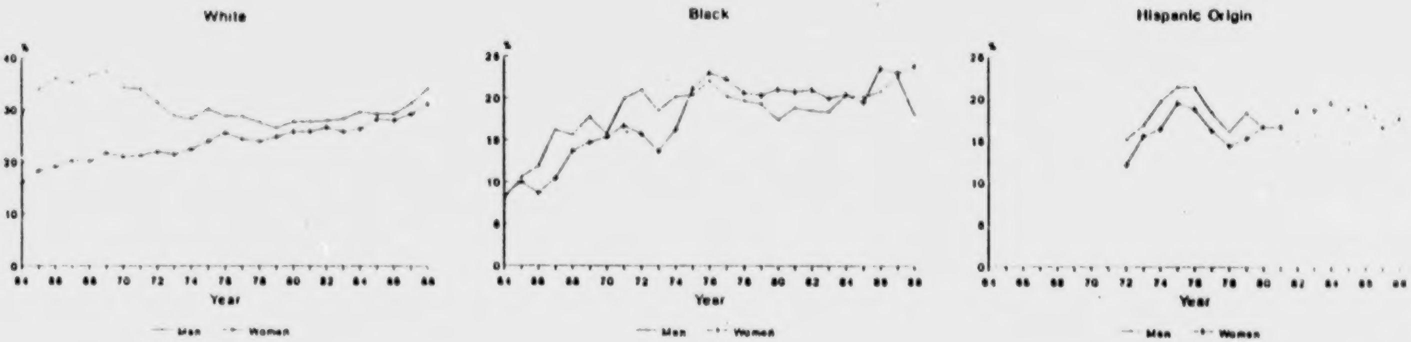
The Bureau of the Census argues, in essence, that the "new, additional" high school graduates who have caused the Black high school graduation rate to increase, are not enrolling in college. Thus, these new graduates lower the percent of high school graduates attending college. The lack of proper academic preparation for college among Black high school graduates is the subject of new analyses presented in Chapter 3 of this report. The results of these analyses confirm that a large proportion of minority high school graduates are inadequately prepared for college.

Sex Difference

Figure 1.6 contains the percent of persons 18 to 24 years old enrolled in college by sex and race/ethnicity from 1964 to 1988. As the data in Figure 1.6 indicate, the percent of white males 18 to 24 years old enrolled in college has fluctuated from 1964 to 1973 including a low of 29 percent in 1964 to a high of 37 percent in 1969. From 1973 through 1988 the percent of white males in college remained relatively stable at about 29 percent. White females followed a different pattern rising steadily from 16 percent in 1964 to 31 percent in 1988, for a dramatic overall increase of 94 percent.

Patterns of enrollment for minority males and females differed from that of whites. The percent of Black males 18 to 24 years old enrolled in college has been about the same as the percent of Black females, except for a period from 1966 through 1974 where Black males increased more rapidly than Black females and in 1988. From 1975 to 1987 the female rate of college attendance has slightly exceeded the male rate for all years except

Figure 1.6 Percent of Persons 18 to 24 Years Old Enrolled in College by Sex and Race/Ethnicity: October 1964 to October 1988



1 May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students. October (various years)."

1985. In 1988 the Black female rate of attendance rose to 24 percent while the Black male rate fell to 18, creating a substantial difference. However, it is important to note that it is too early to tell whether or not this significant difference will persist over time.

The pattern for Hispanic males contained in Figure 1.6 shows a period of increased enrollment from 1972 to 1976, followed by a mild decrease from 1980, and then a period of stability. Overall, Hispanic males enrolled in college have only increased from 15 percent in 1972 to almost 17 percent in 1988. The percent of Hispanic females enrolled in college has increased since 1978, and has remained above the rate for males since 1980, except in 1987. Overall, Hispanic females enrolled in college have increased almost 50 percent, rising from 12 percent in 1972 to almost 18 percent in 1988.

Summary

Data from CPS demonstrate that Black and Hispanic enrollments in IHEs have increased dramatically over the past two decades and data from both CPS and HEGIS/IPEDS show that Black and Hispanic enrollments have continued to increase during the past 10 years. However, despite these increases, the current percentage of Blacks and Hispanics going to college remains below that for whites, which has remained at about 27 to 29 percent over the same period. The next section analyzes trends in the type of college minority students are attending.

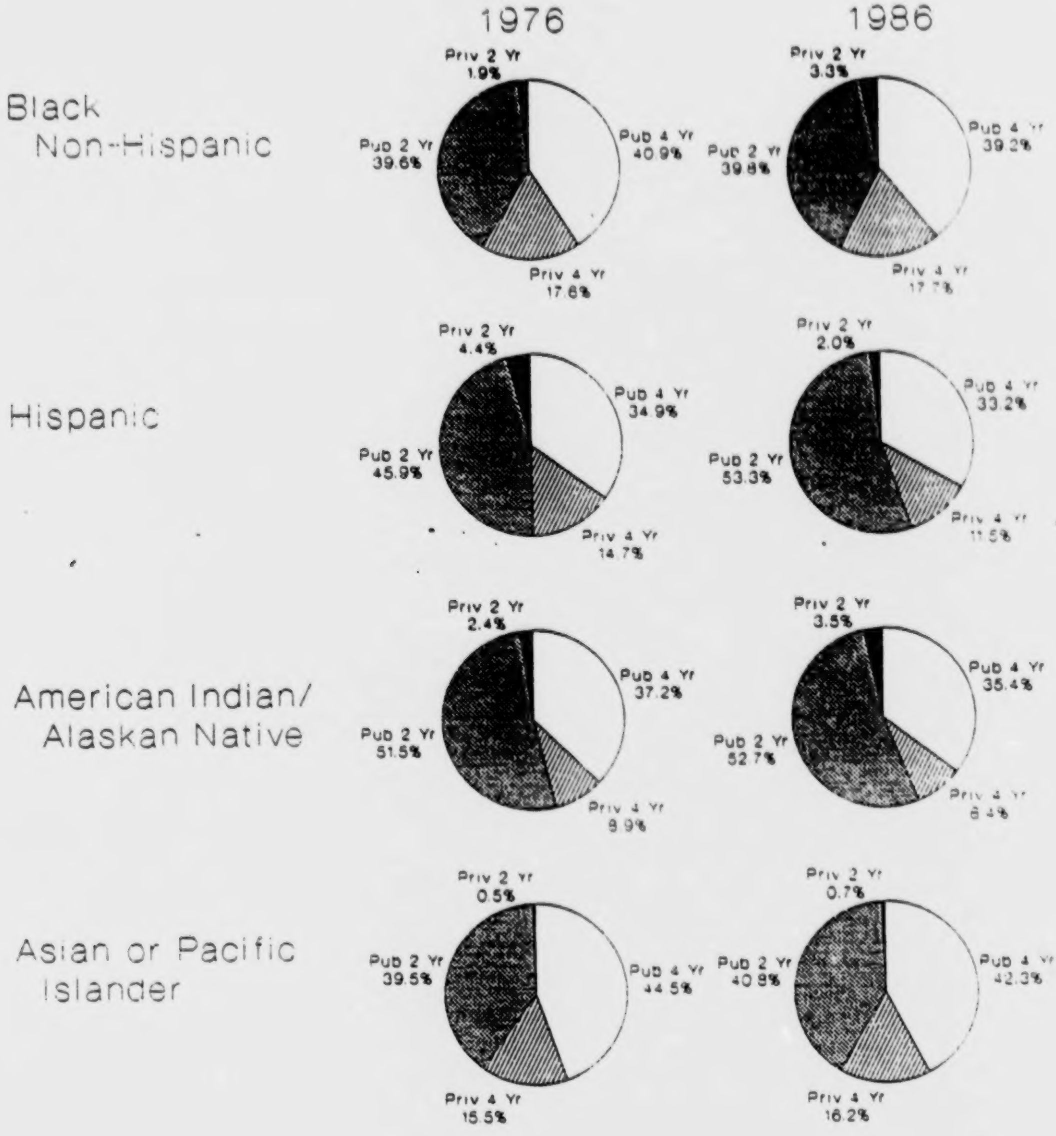
Trends in The Type of College Students Attend

Data from HEGIS/IPEDS allow analyses of trends in the type of college students attended from 1976 to 1986 by race/ethnicity. The distribution of college students by type of college (private two-year, public two-year, private four year, and public four year) for 1976 and 1986 are contained in Appendix Table A.7. These data show that white college students attend four-year public institutions more frequently (43 percent) than any other type of college. Two-year public institutions are the next most frequently attended type of college (34 percent) followed by private four-year (21 percent) and private two-year (two percent). Changes in the distribution over the ten-year period from 1976 to 1986 were all quite small. The percent attending four-year public decreased from 45 to 43 percent; the percent attending two-year public increased from 33 to 34 percent; and the percent at two-year private increased from one to two percent.

Analyses of HEGIS/IPEDs data are used in Figure 1.7 to graphically show the distribution of minority college students by type of college and race/ethnicity for 1976 and 1986. The figure shows that in 1986 Black college students attended four-year public institutions at about the same rate (39 percent) as they attended two-year public institutions (40 percent). (It should be noted, however, that when control of institution is not considered, a majority of Black students (57 percent) attended four-year rather than two-year institutions in both 1976 and 1986.) Four-year private institutions are the third most frequently attended (18 percent) followed by two-year private institutions (three percent). Changes in the distribution of Black students over the ten-year period from 1976 to 1986 were slight. There was an increase in attendance at two-year private colleges, from two to three percent.

Hispanic college students currently attend two-year public institutions more frequently (53 percent) than any other type of IHE. Four-year public institutions are the second most frequently attended type

Figure 17
Distribution of Minority College Students by Type of College and Race/Ethnicity: 1976 and 1986



Source: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey (1976-84) and Integrated Postsecondary Education Data System (1986)

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(33 percent), followed by four-year (12 percent) and two-year private institutions (two percent). During the ten-year period from 1976 to 1986 the percent of Hispanic students in two-year public institutions increased from 46 to 53 percent, while the percent in two-year private institutions decreased from four to two percent.

As in the case of Black students, Asian and Pacific Islander college students currently attend four-year public institutions at about the same rate (42 percent) that they attend two-year public institutions (41 percent). As with Black students, it should be noted, however, that the majority of Asian and Pacific Islander students (58 percent) attend four-year colleges. Also, as was the case with Black students, four-year private institutions are the third most frequently attended type of institution (16 percent) followed by two-year (one percent), private institutions. The distribution of Asian and Pacific Islander students did not significantly change from 1976 to 1986. The percent of students in public four-year colleges decreased by two percent while the percent of students in private four-year increased by about one percent.

The distribution of American Indian/Alaskan Native college students by type of college is similar to the distribution of Hispanic students. The majority of American Indian/Alaskan Native students attend two-year public institutions (53 percent), as do Hispanic students. As with Hispanics, the second most frequently attended type of IHE is four-year public institutions (35 percent) followed by four-year (eight percent) and two-year (four percent) private institutions, respectively. The distribution of American Indian/Alaskan Native students did not change significantly from 1976 to 1986. The percent of students in public four-year IHEs decreased two percent.

In summary, these data indicate that Hispanic and American Indian/ Alaskan native college students most frequently attend two-year public institutions while white college students most frequently attend four-year public institutions. Black and Asian college students currently attend four-year at about the same rate as two-year public colleges. From 1976 to 1986, the distribution of college students remained relatively unchanged both for white and minority students. The next section of this chapter will review trends in college completion.

Trends in College Completion

Trends in minority completion of four or more years of college or attainment of a bachelor's degree can be investigated by analyzing data from two sources:

- The U.S. Census Bureau's March educational attainment supplement to the CPS which collects data on completing four or more years of college; and
- The U.S. Department of Education's "Degrees and Other Formal Awards Conferred" survey which collects data on obtaining a bachelor's degree.

Data from CPS and ED are not comparable. The CPS data may be used to investigate trends from 1964 to 1987 in the years of college completed for different age ranges by race and ethnicity. The ED degree data may be used to investigate trends in obtaining a bachelor's degree but the data are available only for five years: 1976-77, 1978-79, 1980-81, 1984-85, and 1986-87. The ED data permit the analysis of trends among persons of white, Black, Hispanic, Asian or Pacific Island, and American Indian/ Alaskan

Native origin, while the CPS data permit analysis of only persons of white, Black, and Hispanic origin.

Analysis of CPS data for persons 25 to 34 years old indicates that the number of persons completing four or more years of college has increased substantially for white, Black, and Hispanic persons. (Completing four or more years of college is used by the CPS as an indicator of college completion.) In particular, from 1964 to 1987 the number of persons 25 to 34 years old completing four or more years of college:

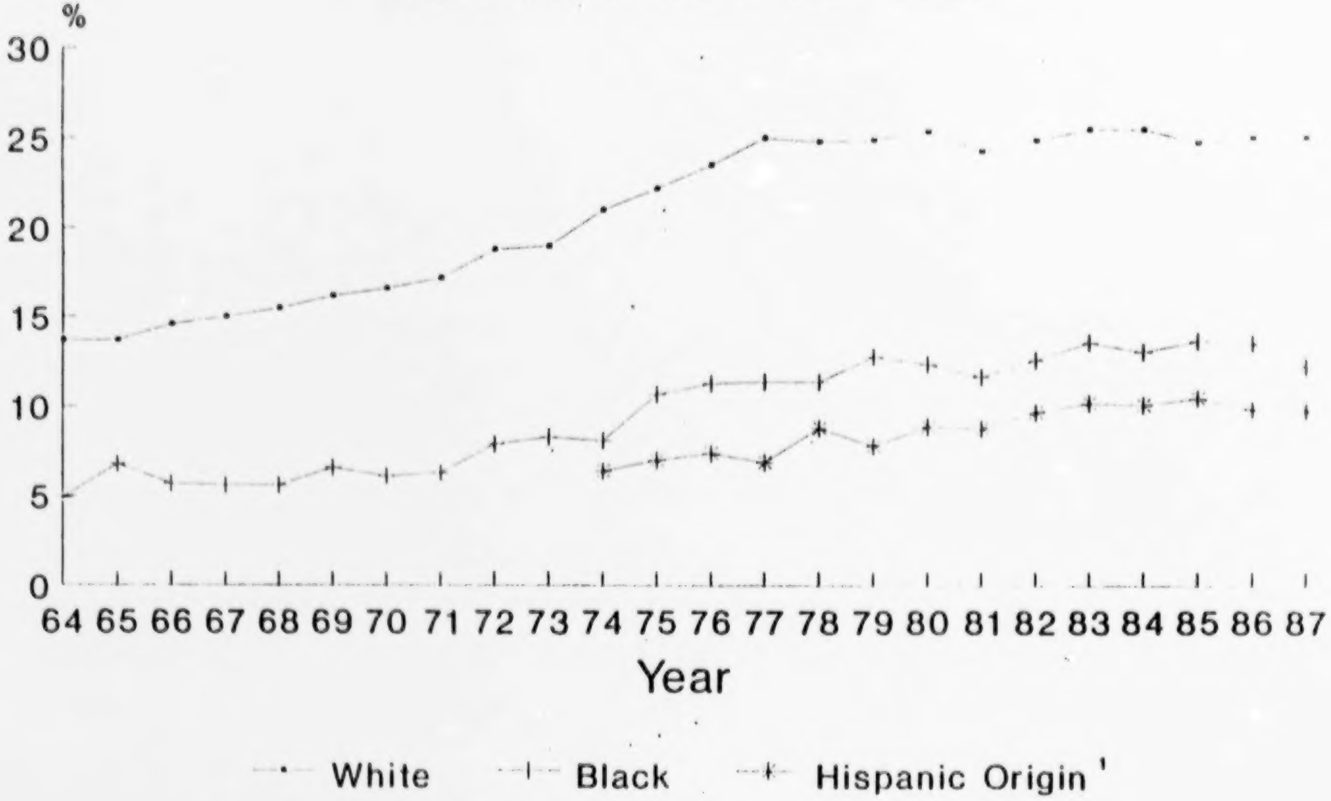
- Increased substantially for whites rising from 2,653,000 persons in 1964 to 9,003,000 in 1987; and
- Also increased substantially for Blacks rising from 119,000 persons in 1964 to 640,000 in 1987.

The data for persons of Hispanic origin, who may be either white or Black, are only available from 1974. During the period 1974 to 1987, the number of persons completing four or more years of college:

- Increased substantially for Hispanics going from 98,000 to 353,000 persons.

Figure 1.8 contains the percent of persons 25 to 34 years old completing four or more years of college. These data indicate that the percent of each racial/ethnic group completing four or more years of college has also increased. The percent of white persons completing four or more years has gone from 13.7 percent in 1964 to 25.1 percent in 1987. The percent of Black persons completing four or more years has gone from 4.9 percent in 1964 to 12.3 percent in 1987. During the period from 1974 to 1987, the percent of Hispanic persons completing four or more years of college went from 6.4 percent in 1974 to 9.8 percent in 1987.

Figure 1.8 Percent of Persons 25-34 Years Old Completing Four or More Years of College by Race/Ethnicity: March 1964 to March 1987



[1] May be of any race.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "Educational Attainment in the U.S.: March (various years)."

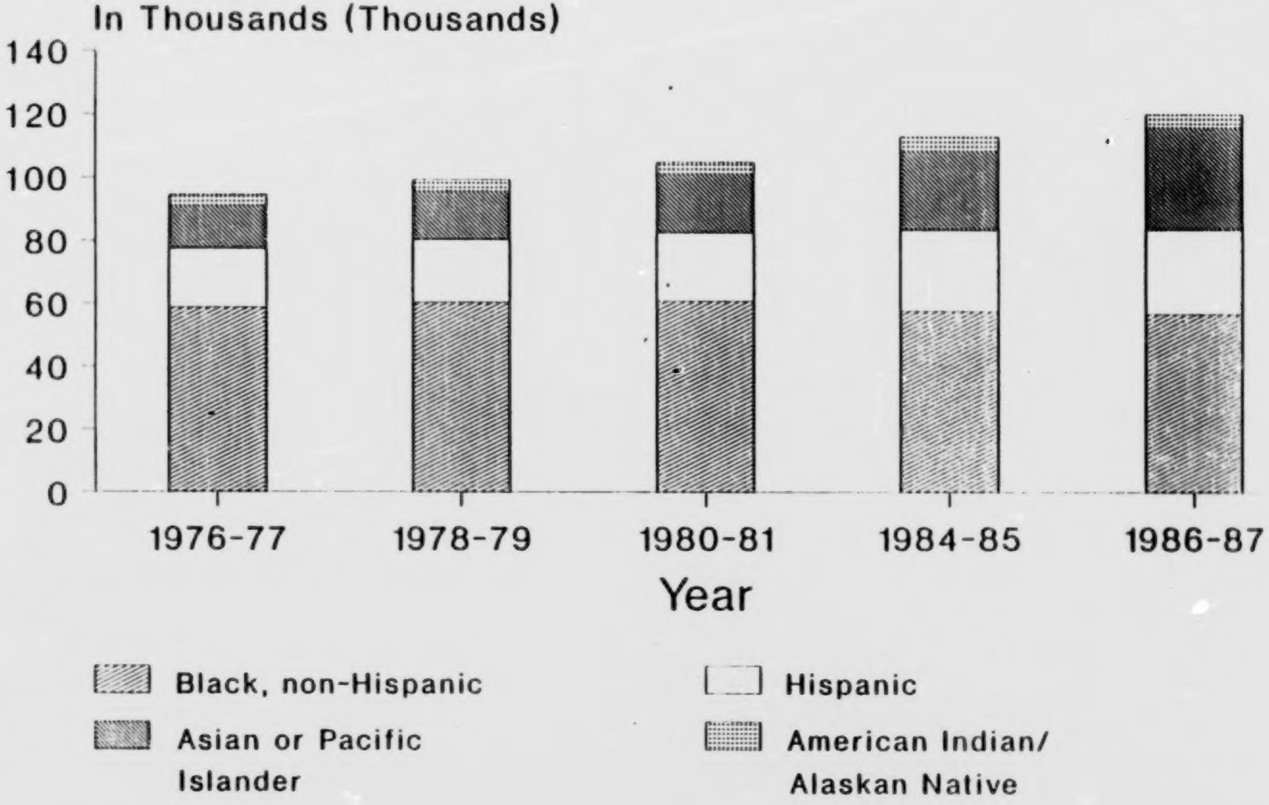
The increases in both the number of persons and the percent of the population completing four or more years of college are significant for both Blacks and Hispanics. However, the completion rates of both minority groups (12.3 and 9.8 percent) are still less than half of the white completion rate (25.1 percent). Moreover, the gap in completion rates is growing larger rather than decreasing.

Data from ED show the number of bachelor's degrees conferred by IHEs by race/ethnicity group for five years: 1976-77, 1978-79, 1980-81, 1984-85, and 1986-87. These data, which are presented in Figure 1.9, indicate that the number of degrees conferred to:

- Minority students have increased by 27 percent from 94,498 in 1976-77 to 120,134 in 1986-87;
- All minority groups except Black students increased during this period;
    - Hispanic students increased by 44 percent from 18,743 to 26,990;
    - Asian or Pacific Islanders increased by 136 percent from 13,793 to 32,618; and
    - American Indians/Alaskan Natives increased by 19 percent from 3,326 to 3,971.
- Black students decreased by almost four percent from 58,636 to 56,555.

These findings differ somewhat from the analyses of CPS data for Black and Hispanic students. During the period March 1977 to March 1987, CPS data show a less than one percent increase for Blacks, while the ED data show a 3.5 percent decrease. For Hispanics, CPS data show a larger increase (74 percent) than the increase (44 percent) found in the ED data. These differences are attributable to four causes: CPS estimates the number of persons 20 to 24 years old who have, at any time in the past,

Figure 1.9 Bachelor's Degrees Conferred to Minorities by Race/Ethnicity: 1976-77 to 1986-87



Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

completed four or more years of college rather than estimating the number of persons being awarded a new degree in that year; completing four or more years of college does not always mean obtaining a degree; the CPS data we used are limited to persons 20 to 24 years old; and sampling error. The ED data are accurate but are limited to just a 10-year period: 1977 to 1987. The CPS data are only indicative, but span a much longer period of time: 1964 to 1987.

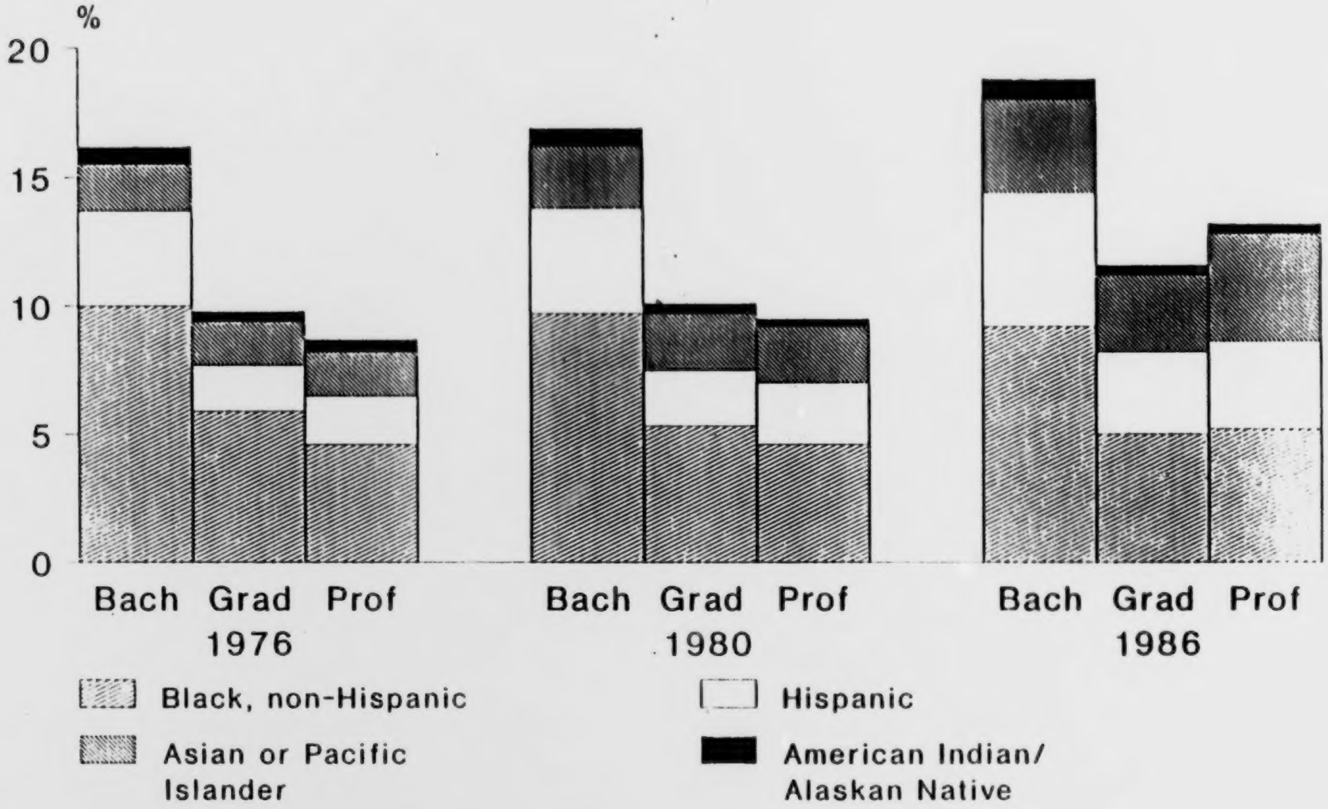
Trends in Graduate and Professional School Enrollment: 1976-1986

In 1986, the most recent year for which data are available, total graduate and first-professional fall enrollment in the United States was at an all time high of 1,702,000 students. This represented a 16.1 percent increase in enrollment over the enrollment levels of 1976. This increase outpaced the undergraduate enrollment increase of the same period which was 13.3 percent. These figures include both full- and part-time students.

Minority participation in IHEs, as for white participation, tends to decrease as the level of education pursued increases. Figure 1.10 shows that all minority graduate level program participation levels, except for Asian Americans in first-professional, are lower than their levels in undergraduate programs.

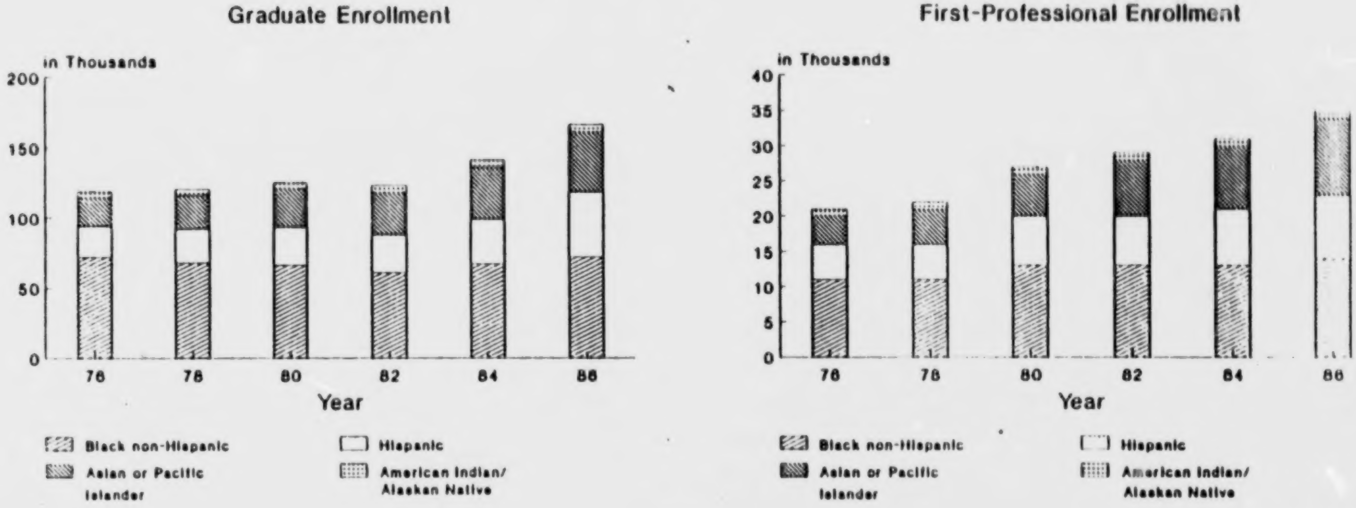
While the percentage of graduate program enrollment which is minority has consistently been less than the percentage of minorities in undergraduate programs, there have been important changes in minority graduate and professional program participation over the ten years between 1976 and 1986. Figure 1.11 displays the graduate and professional school enrollment which was minority between 1976 and 1986 by race/ethnicity.

Figure 1.10 Percent of Minority Enrollment by Level of Study and Race/Ethnicity: 1976, 1980, 1986



Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey (1976-84) and Integrated Postsecondary Education Data System (1986).

Figure 1.11 Minority Enrollment in IHEs by Level of Study and Race/Ethnicity of Students: 1976 - 1986



Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey (1976-84) and Integrated Postsecondary Education Data System (1986).

Overall, minority graduate level enrollment has risen rather rapidly. There are, however, differences among groups:

- The number of Black students enrolled in graduate school has not increased at all, whereas, the Hispanic and Asian American populations have increased their participation significantly;
- Persons of Asian and Hispanic origin account for much of the overall growth in graduate and professional enrollment. These groups account for 21.6 percent of the increase in graduate school enrollment over the decade and 42.3 percent of the increase in first-professional enrollment; and
- Recent changes in graduate and professional program participation for Blacks and American Indians, while not so dramatic as for Hispanic and Asian Americans, hold some promise. After a steep decline from 1976 to 1982 the number of Black students in graduate school has returned to its 1976 level. The number in professional school is increasing slightly. The American Indian population in graduate and professional school has remained relatively constant over the 1976 to 1986 period.

In the next section the impact of these changes on the degree production of U.S. graduate and professional schools will be discussed.

Trends in Graduate and Professional Degree Attainment

Enrolling in a graduate degree program does not necessarily result in obtaining a degree. Just as the attainment rates in undergraduate education lag behind enrollment rates, graduate degree attainment rates lag behind graduate enrollment rates. In fact, while graduate enrollment has increased, graduate degree attainment has actually declined. Overall, master's degree production in the United States has fallen 8.6 percent from 1977 to 1987. There has been an increase in doctoral degree production, which rose 2.7 percent, and in first-professional degree production, which rose 12 percent.

Figure 1.12 displays the number of master's degrees conferred by IHEs from 1976-77 to 1986-87 by race/ethnicity. At the master's degree level, the data show:

- A substantial decrease (34 percent) in the number of master's degrees obtained by Black students, from 21,037 in 1977 to 13,867 in 1987;
- Among all other minority groups, master's degree attainment has risen: from 5,122 in 1977 to 8,558 in 1987 for Asian or Pacific Islanders (67.1 percent), from 967 in 1977 to 1,104 in 1987 among American Indians (14.2 percent) and from 6,071 to 7,044 among Hispanics (16.0 percent).

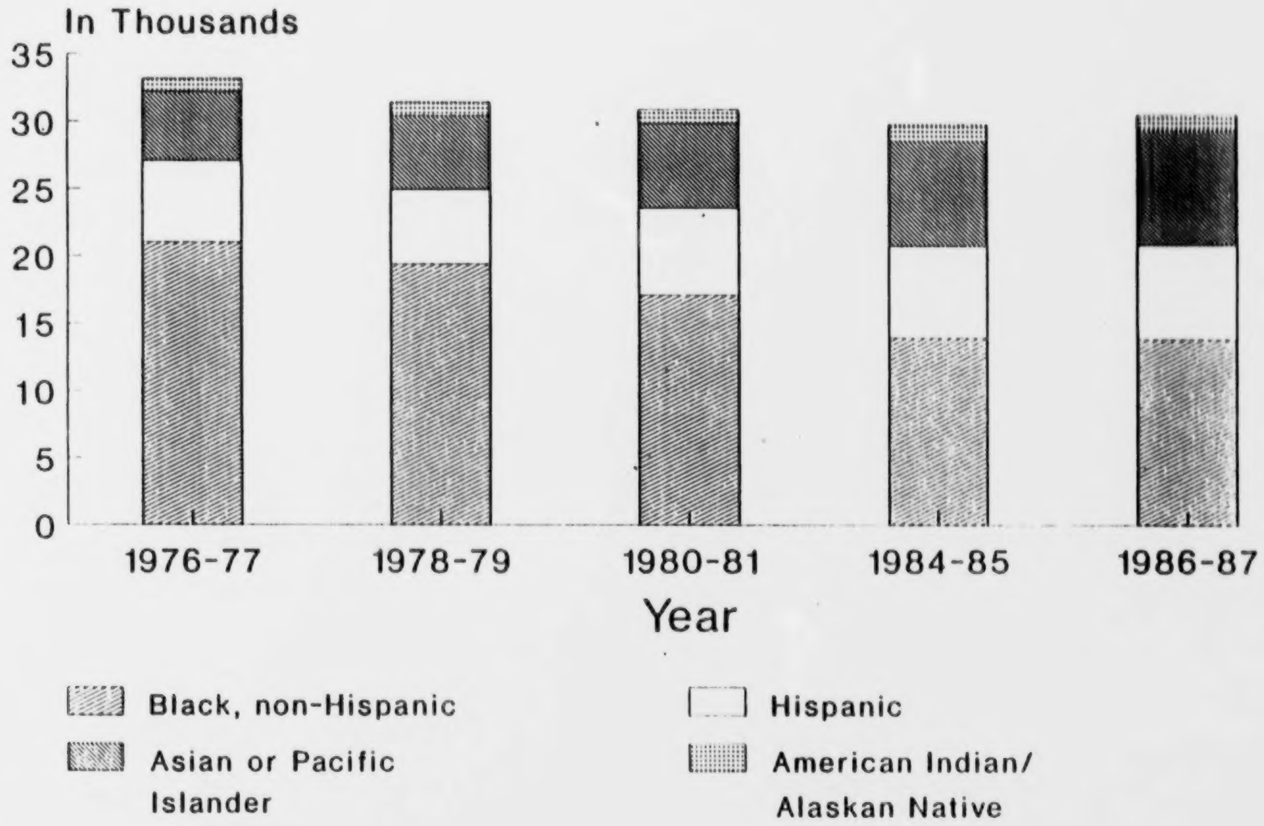
There are two major sources of data pertaining to doctoral degree attainment:

- The U.S. Department of Education's National Center for Education Statistics' "Degrees and Other Formal Awards Conferred" surveys; and
- The National Research Council's (NRC's) "Survey of Earned Doctorates" (SED) which is conducted under the sponsorship of several Federal agencies, including the National Science Foundation and the U.S. Department of Education.

ED data are collected annually from each IHE on all degrees conferred by the institution. The respondent is an officer of the IHE. Data on characteristics of recipients are generally not collected. However, race and ethnicity data are collected every other year, although the reports of these data do not permit identification of aliens with permanent visas. ED data are available through the 1986-87 school year.

NRC data are collected annually from all IHEs with accredited research doctoral programs. These surveys exclude data on degrees granted in non-research areas such as theology. The degree recipient provides the information which includes a variety of data on background characteristics and post-graduation plans. The NRC data also allow the identification of

Figure 1.12 Master's Degrees Conferred to Minorities by Race/Ethnicity: 1976-77 to 1986-87



Source: U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey.

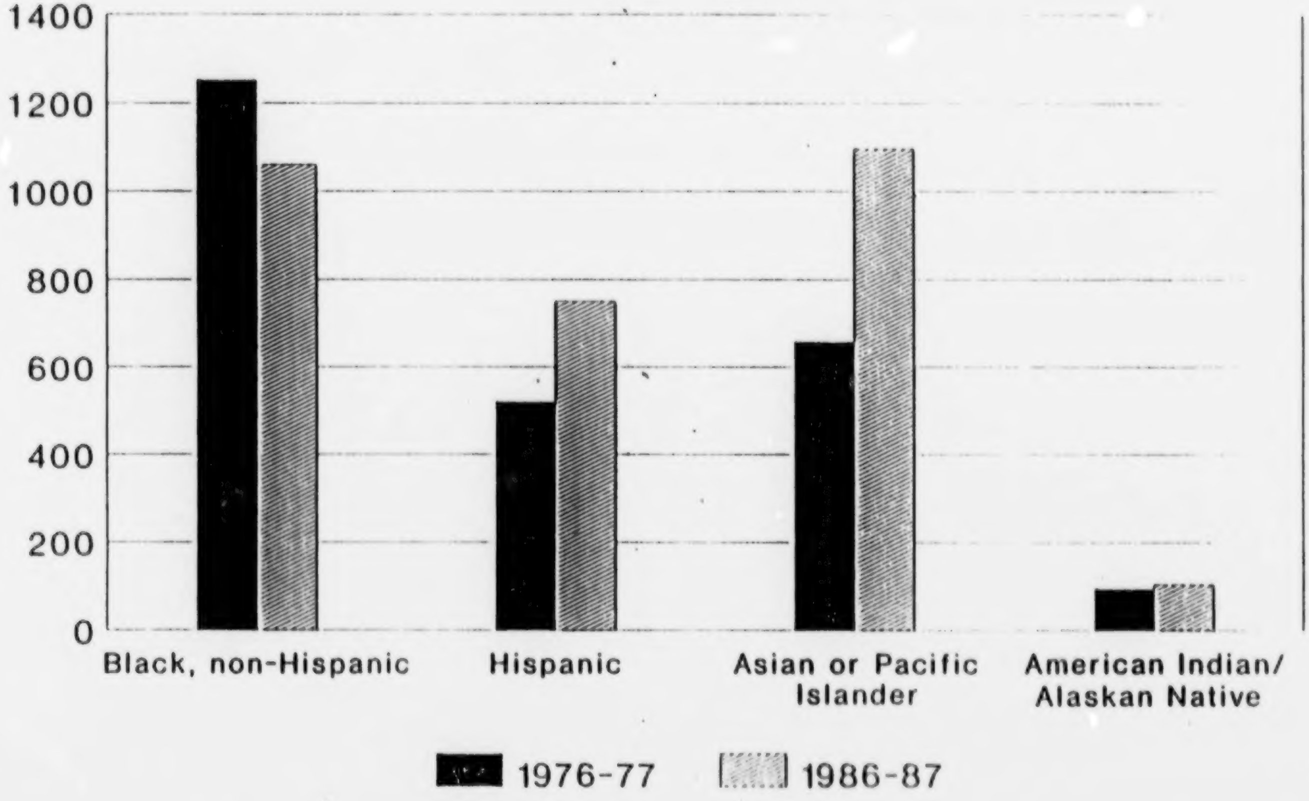
those with temporary and permanent visas. NRC data are available through the 1985-86 school year.

Because the NRC data are more restrictive in their focus on only research doctorates, they consistently report less degree attainment within any population group than the ED data. Removing those with permanent alien status from the NRC totals also permits a closer approximation of doctoral attainment among minorities with U.S. citizenship. This also increases the gap between the NRC data and the reported ED data. Figures 1.13 and 1.14 contain the number of doctoral degrees conferred according to the ED and NRC data, respectively, by race/ethnicity from the 1976-77 school year through the latest date for which they are available. As reported here, the NRC data are for U.S. citizens only.

The ED data show a decline in degrees conferred to Blacks from 1,253 degrees in 1977 to 1,060 in 1987 (-15.4 percent). The number of degrees conferred rose for all other minority groups: from 522 in 1977 to 750 in 1987 (43.7 percent) for Hispanics; from 658 in 1977 to 1,097 in 1987 (66.7 percent) for Asian or Pacific Islanders; and from 95 in 1977 to 104 in 1985 (9.5 percent) for American Indians.

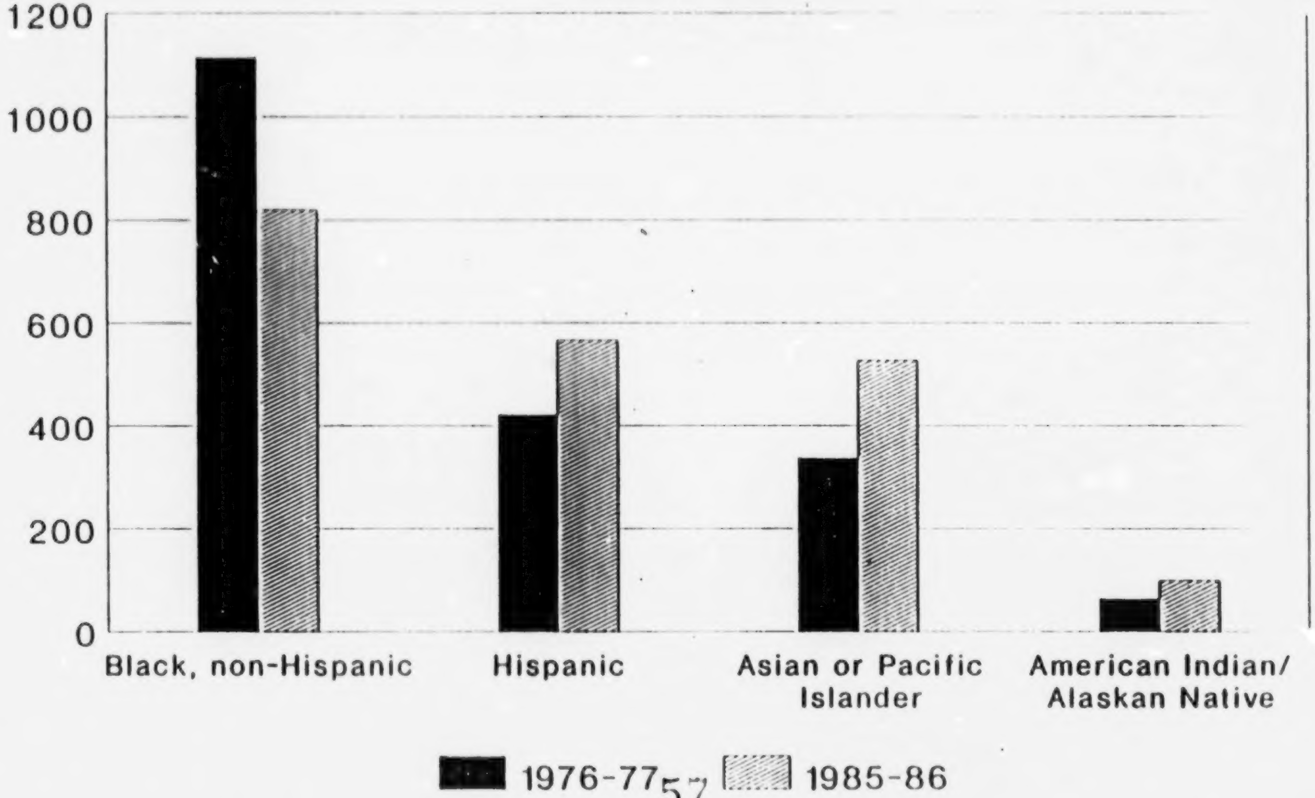
Figure 1.14, which contains the NRC data, shows declines in research doctorate production among Blacks of an even greater magnitude than the eight percent decline reported in the ED data. According to the NRC data, between 1977 and 1986 doctorates awarded to Blacks declined from 1,116 to 820, a drop of over 25 percent. For all other groups it rose: by 55 percent among Asian Americans; by 34 percent among Hispanics; and by 52 percent among American Indians.

Figure 1.13 Doctoral Degrees Conferred to Minorities By Race/Ethnicity: 1976-77 and 1986-87 (ED Data)



Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

Figure 1.14 Doctoral Degrees Conferred to Minorities By Race/Ethnicity: 1976-77 and 1985-86 (NRC Data)



Source: National Research Council, Office of Scientific and Engineering Personnel, Survey of Earned Doctorates, 1975-1986.

Data describing first-professional degree production in IHEs by race/ethnicity are contained in Appendix Table A.18. These data show that attainment rates increase across all groups, with minority students showing greater percent increases than white students. Only data for the production of white and American Indian dentists show declines in degree production. Once again, the percent changes in degree production in all professional fields are greatest for the Asian American and Hispanic populations.

There has been a change between 1976 and 1984 in the distribution of fields of study among minorities who have attained graduate degrees. That change is due primarily to declines in degree attainment in certain fields rather than to shifts to new fields. Appendix Tables A.21 and A.22 display the total master's and doctoral degrees awarded in 1976, 1978, and 1984 for broad fields of study by race/ethnicity, as well as the distribution of these fields of study among these groups. The tables show:

- Much of the decline in master's degree attainment among Blacks was in the fields of education, social/behavioral sciences and humanities. Attainment in business and science/technology fields rose slightly. Similar changes also occurred in doctoral degree attainment over the same period.
- Distribution of master's degree attainment by Hispanics has followed a pattern similar to that of Blacks. There were declines in education and social/behavioral sciences and humanities, and modest increases in business and science/technology fields.
- Asian Americans were disproportionately distributed to the science/technology fields relative to the other groups. That distribution has increased so that now over 44 percent of the master's degrees awarded to this group are in those fields as well as 69 percent of the doctorates.
- Master's and doctoral degree attainment among whites also fell between 1976 and 1984. For this group, declines were in all fields including science/technology and doctoral level

business degrees. Attainment of master's degrees in business rose, however.

Minority Enrollment in Proprietary Schools

A type of postsecondary institution in which many minority students enroll is the Proprietary Postsecondary Vocational Training (PPVT) School. Vocational-technical education, in general, is made up of a diverse set of public and private institutions dedicated to training students for employment. Public vocational-technical education most often takes place in community colleges which offer vocational programs, as well as other programs in the humanities, arts, and sciences. In addition, some states support institutions that are exclusively vocational-technical. In the private sector a variety of vocational-technical institutions also offer postsecondary training. These schools range from small "family" businesses such as schools of hair design, with courses lasting a few months and enrolling a dozen or so students, to larger institutions offering career, undergraduate, and graduate programs in a wide variety of areas including aircraft maintenance, automotive and diesel mechanics, electronics, commercial art and design, computer programming and repair, business and secretarial skills.

Although there have been no large, national studies of the growth in proprietary school enrollment, it is clear from smaller studies and the growth in grants and loans for students enrolled in PPVT that enrollments in PPVT schools have mushroomed over the past decade. Moore (1987) estimates that between 1976 and 1982 enrollments in proprietary schools grew by over 60 percent, that the over 5,500 proprietary schools operating in 1982 accounted for 88 percent of all the noncollegiate postsecondary vocational institutions, and that the enrollment of over one million students represented 67 percent of the noncollegiate vocational enrollments (Moore, 1987). Enrollment growth has continued since 1982. Fitzgerald and Harmon (1987) estimate that in the past two years the enrollment in this sector has grown 18 percent.

Unfortunately, without reliable national data it is impossible to estimate with any certainty the level of minority enrollment in these schools. However, since they are open to virtually all applicants, including high school dropouts, it is generally assumed that the minority enrollment in PPVTs exceeds the proportion of minorities in the general population. The impact of PPVT enrollment on college going among minorities is discussed in Chapter 3 which analyzes factors hypothesized to account for the gap between white and minority college going rates.

CHAPTER 2

THE ROLE OF PREDOMINANTLY MINORITY INSTITUTIONS OF HIGHER EDUCATION

Overview

The previous chapter has identified the dramatic growth in minority enrollment and degree attainment in higher education that began with the end of World War II. After the Supreme Court's Brown decision in 1954 and the passage of the Civil Rights Act of 1964, these changes accelerated and have impacted a significant number of the nation's IHEs in a variety of different ways. This chapter is about the impacts that have occurred in two types of IHEs that, together, enroll a substantial portion (about 25 percent) of the minorities who pursue a college education: historically Black colleges and universities (HBCUs) and predominantly minority urban community colleges. The chapter begins with a brief discussion of the public policy orientation to HBCUs over their nearly 150 year history. The next two sections of the chapter review a set of data on HBCU enrollment, resources and outcomes, and a set of research studies on Black student performance in HBCUs compared to that of Black students in predominantly white schools. Major findings from this section include the following:

- In terms of enrollment, the HBCUs have grown significantly during the period of increased educational opportunity for Blacks, although, as would be anticipated during an expansion of opportunity, their share of the Black enrollment has actually declined dramatically. While just before the Brown decision, the total HBCU enrollment of about 71,000 students represented 90 percent of all Black students enrolled in higher education, today the HBCU enrollment of 214,000 students accounts for only about one-third of Black students enrolled in four-year schools;

- While HBCUs have historically had fewer financial resources than similar institutions serving predominently white populations, today, public two and four-year and private two-year HBCUs spend from 10 to 30 percent more per FTE student than do other institutions of the same type. Private four-year HBCUs spend about 10 percent less per FTE student than other private four-year colleges;
- As recently as 1967, 80 percent of the bachelor's degrees earned by Blacks were earned in HBCUs. Today, HBCUs account for about 35 percent of such bachelor's degrees;
- In general, Blacks in public HBCUs suffer greater attrition and progress more slowly than Blacks on other public college campuses, although they receive higher GPAs;
- However, since HBCU students are less advantaged in terms of finances and previous academic achievement than either their Black peers on other campuses or than white students, HBCUs are clearly serving students with more complex needs.

As these last two findings indicate, the role of HBCUs has shifted over the past two decades. During the 50s and 60s, and before, the HBCUs were serving the majority of Black students enrolled in higher education because these students, due to their race, were denied admission to other, predominantly white, schools. Today, these schools are serving even larger numbers of students, predominantly Black, who, because of their prior academic experience are less able or less inclined to seek admission to other institutions. Clearly, the HBCUs are offering these students a supportive environment in which to pursue their aspiration to attain a college degree.

The second type of institution reviewed in this chapter is the community college. Eighty-three of these schools are predominantly minority in enrollment and most of the 83 are located in urban areas.

Many other community colleges, especially urban ones, enroll large numbers of minority students. Together with HBCUs, the predominantly minority and other urban community colleges comprise a source of educational services for minorities that is disproportionate to their number in the universe of IHEs. Findings in this chapter concerning minorities and community colleges include the following:

- Community colleges, due to their local proximity and affordability, as well as the scope of their offerings which provide courses for personal enhancement, vocational preparation, or to cover the first two years of a bachelor's level education, provide an excellent opportunity for minority students to gain access to a postsecondary education;
- In 1986, minority students constituted 22 percent of community college enrollment. Hispanics and American Indians rely more upon the community college systems than do Blacks and Asian Americans. Of the minorities enrolled in higher education, 55 percent of Hispanics and 56 percent of American Indians, compared to 43 and 42 percent respectively of Blacks and Asian Americans, are enrolled in community colleges.
- While up to 75 percent of the young new entrants to a community college indicate they aspire to a bachelor's degree, only about 15 to 25 percent transfer to four-year college and only about 10 to 15 percent attain the bachelor's degree. When adjusted for student background and achievement, the rate of bachelor's attainment has been found to be 13 percent less for those who initially enter a two-year rather than a four-year school.
- There are many reasons for the low transfer and bachelor's degree attainment rates associated with a community college education. Some factors are related to the students who attend community colleges, and other factors are institutional in nature and are amenable to improvement (see Chapter 4).

Introduction

Historically, minorities in the United States have been denied easy access to many of the nation's institutions of higher education (IHEs). This was the case particularly for Blacks, who, until the 1960s and

1970s, had to rely nearly exclusively upon a set of institutions created especially to serve the Black community. Graduates of these institutions, such famous Americans as Martin Luther King, Thurgood Marshall, Andrew Young, Langston Hughes, John Hope Franklin, Kenneth Clark, Barbara Jordan, Harold Ford, Ed Bradley, Roberta Flack, Whitney Young, Marian Wright Edelman, Ralph Ellison, and Jesse Jackson, have taken their place as leaders in America's political, artistic, scholarly, and business communities and have demonstrated that these institutions produce graduates who are as capable as those of any other set of institutions.

Today, these historically Black colleges and universities (HBCUs), as they have come to be known, along with another set of newer, mostly urban, and, frequently, two-year institutions, serve a somewhat smaller but, nevertheless, significant proportion of the Black and other minority population pursuing higher education. An analysis of minority enrollment by type of IHE indicates that over 55 percent of all minority college students are enrolled in either two-year institutions or HBCUs.

There are currently 217 IHEs in the U.S. which are predominantly minority in enrollment. Of these, 104 are HBCUs and 83 are two-year public institutions which are predominantly urban in location. The predominantly minority two-year schools and HBCUs enroll over one-quarter of the Blacks and Hispanics in postsecondary education.

This chapter will examine the historical and current role of these institutions in providing a positive higher education experience for their minority constituents. The chapter is comprised of two sections. The first reviews the public policy perspective taken towards the HBCUs over the approximately 150-year history of organized Black higher education in the United States, the current enrollment and other trends in HBCUs, and relevant research about the outcomes of education for Blacks attending predominantly Black and predominantly white institutions. The second section reviews available data about the two-year public institutions which account for the largest single portion of minority enrollment among different types of IHEs, and particularly the urban community college.

The Historically Black College and University

Colleges and universities that have historically served the Black population united to form the National Association for Equal Opportunity in Higher Education (NAFEO) in 1969. Included in NAFEO's efforts has been the publication of much data and information about the Black colleges and universities. Where appropriate, this section draws upon those data and other NAFEO reports as a primary source of information.*

Table 2.1 provides information about the distribution of the 104 HBCUs along some important dimensions. Most are four-year schools and award a bachelor's degree. Thirty-eight HBCUs also award graduate degrees. Sixty are private schools, of which 45 have an affiliation with

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* While NAFEO currently considers 104 of its member IHEs to be HBCUs, in its statistical compilations, the National Center for Education Statistics (NCES) considers only 99 institutions to be traditionally Black Institutions (TBIs). The 99 NCES-recognized TBIs are all among the 104 NAFEO HBCUs. The discrepancy in the two classifications concerns the age of the institutions, reporting, and accreditation differences. Because of the availability of historical data using the NCES designation, most tabulations in this section will be based on the 99 TBIs, although, for purposes of consistency, we will use the NAFEO preferred designation, HBCU, for these institutions.

Table 2.1

Number of HBCUs and Fall Enrollment by Control and Type: 1987

	Control					
	Public		Private		Total	
	Number	Enrollment (in thousands)	Number	Enrollment (in thousands)	Number	Enrollment (in thousands)
Four-Year	38	146	49	57	87	203
Two-Year	5	6	7	2	12	8
Total	43	152	56	59	99	211

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

a religious denomination. However, two-thirds of the student enrollment are in the 44 public institutions. Most of the HBCUs are in the south or southwestern states, where a total of 90 are located.

An Historical Perspective

The first Black College was founded about 150 years ago during a period when, by tradition, and in the South, by law, most Blacks did not receive any formal education. Since that time the public policy position towards the education of Blacks has evolved through a series of distinctive periods.[*] This section reviews briefly that evolution to provide an appropriate context for the discussion of statistical data concerning HBCUs which follows.

During the earliest period in the postsecondary education of Blacks, 90 percent of the Blacks in the United States lived in the South where most were slaves. Prior to the Civil War, it was illegal in the southern states, to teach slaves to read or write. However, in the North, Blacks were commonly attending "free schools" and religious groups, most notably the Quakers, founded several IHEs exclusively for Blacks. These included Cheyney (founded in 1837) and Lincoln (founded in 1854) in Pennsylvania and Wilberforce (founded in 1856) in Ohio. These first private Black colleges existed primarily to train clergy and teachers for Black communities.

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[*] Recent reviews (Meyers, 1987; Fleming, 1984) have categorized the public policy perspectives of the past 150 years of institutionalized higher education of Blacks in the United States. Fleming divides the policy posture into six periods; Meyers into five. The following discussion draws significantly upon both reviews.

A majority of today's HBCUs were established during the period following the Civil War (1865-1896). Most of today's HBCUs trace their roots to this period (Meyers, 1987). The Reconstruction state governments established public elementary and secondary schools for Blacks with per pupil expenditures that were equivalent to those for the white common schools in the south, which also were, for the most part, newly founded. After Reconstruction ended in 1876, however, public attention to the education of Blacks faltered. As a result, much of the secondary education of Blacks was provided by private groups. Many of the secondary schools established for this purpose later evolved into private Black colleges.

In 1890 the Morrill Act established the land grant institutions of higher education and mandated that states provide separate educational facilities for Blacks or admit them to existing IHEs. The overwhelming response in the South was to quickly develop separate Black public colleges. Thus many public HBCUs were established about this time.

The longest and most consistent period in the evolution of the HBCUs (1896-1954) followed the Plessy v. Ferguson Supreme Court decision. This decision established the separate but equal doctrine which legalized segregation in higher education, as in other public arenas. During this period, there was a continuing debate in both the white and Black communities about what constituted the appropriate approach to the education of Blacks: whether it should consist of a vocational or a liberal education. Educational programs in the public colleges were overwhelmingly vocational training in nature. A few of the private colleges, however, developed strong liberal arts programs.

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During this period, several groups surveyed Black colleges to develop a data base on the postsecondary of Blacks. Over time, these surveys, many of which were conducted by the Federal government, documented an increasing number of Black schools offering college-level and even graduate work. However, what was also emerging from the surveys of this period was the recognition that while there were some high quality private Black liberal arts institutions, the majority of Black public schools were not providing educational treatment equal to what was being offered in other public IHEs. As it became apparent that the courts would hold this unconstitutional, states began converting Black normal schools to four-year state colleges as well as establishing graduate and professional schools at some of these as a means of keeping Blacks out of the other state schools (Meyers, 1987).

The 1954 Brown v. Board of Education Supreme Court ruling opened a new period in the public posture towards HCBUs. Passage of the Civil Rights Act in 1964 reinforced the movement towards desegregation. During this period, the main focus was on eliminating the racial identifiability of many social institutions. After passage of the Civil Rights Act, the primary means of eliminating racial distinctions in IHEs was to integrate Black students into previously white only institutions. During this period, there was also some Federal attention paid to reducing prior inequities in federal aid to the Black IHEs. However, in the view of some Blacks, as a consequence of the thrust to reduce racial distinctions in IHEs the policy of integration served also to make more tenuous the already fragile existence of the HBCUs (Meyers, 1987).

During the late 1970s and early 1980s, there was increasing recognition of the HBCUs' unique historical contribution to the education of Blacks. In the 1970's HEW's Office of Civil Rights sought desegregation of higher education in ways that eventually impacted all 19 states where HBCUs are located. During this period the Federal courts were also involved in the desegregation of higher education through the Adams suit brought by the NAACP. One of the outcomes of these actions was that the dual state systems of higher education were to be dismantled, in part, through strengthening the public HBCUs. This action has resulted in a new phase of the public posture towards HBCUs. During this recent period a great deal of Federal and state support has been directed towards strengthening these institutions. Most recently, President Reagan targeted these institutions for special attention in Executive Order 12320. In addition, Congress passed the Historically Black College Act of 1986. This Act provides "financial assistance to strengthen the physical plants, financial management, academic resources, and endowments" (PL 99-498) of the HBCUs. Through FY 1988, a total of $124.9 million has been appropriated under this Act.

The next section of this chapter reviews data concerning the historical and current contributions of the HBCUs to the education of minorities.

Trends in HBCUs

Enrollment

Historically, the HBCUs were responsible for the education of a much larger percentage of the Black IHE enrollment than they currently serve. According to Fleming, just prior to the Brown decision 90 percent of

Black students were educated in HBCUs (Fleming, 1984). At that point total enrollment was reported as 75,146, about 58 percent of whom were females. In addition, another 44,331 students enrolled for summer school. This group, which was 72 percent female, was composed primarily of school teachers working to complete their undergraduate degree (Hill, 1985).

As desegregation in higher education became more widespread, the percent of the Black population educated in HBCUs declined considerably. However, during this period the enrollments of HBCUs, rather than declining, actually increased, peaking in 1980 at about 222,000. Since then, the enrollment has declined about four percent to 214,000 in 1986, which was close to the 1975 level.

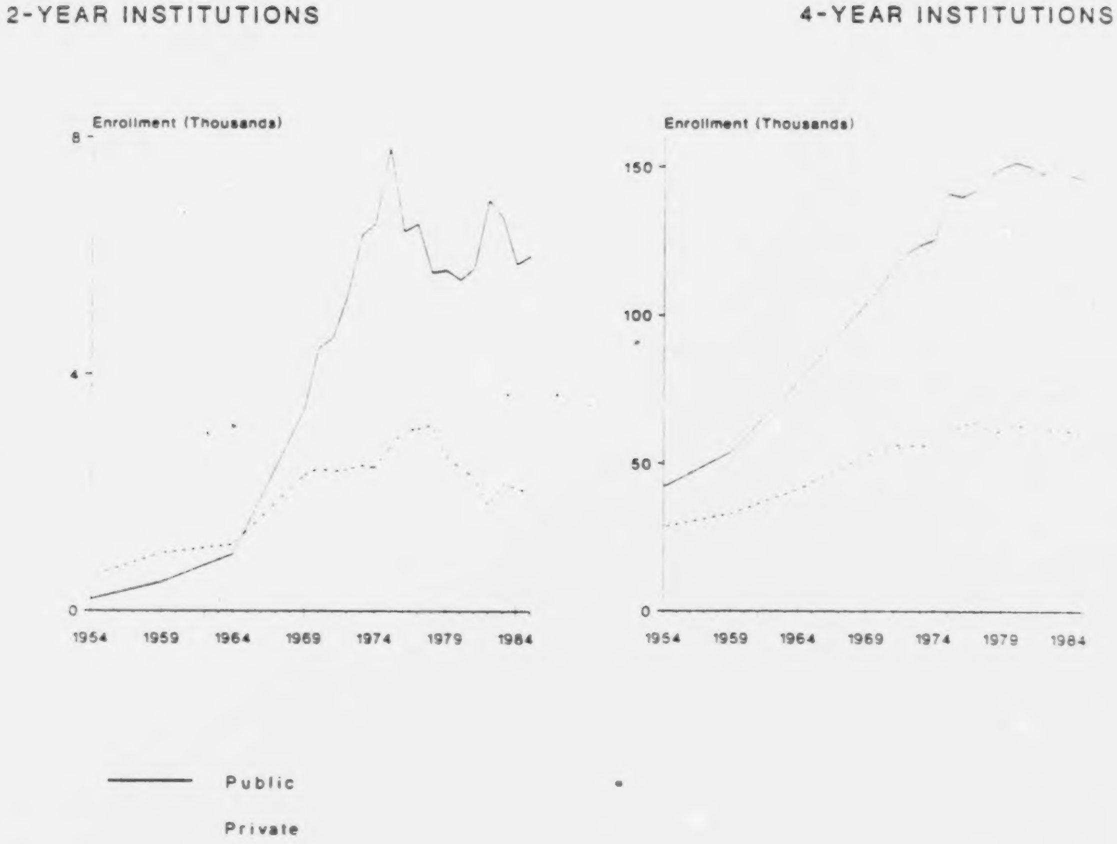
Today:

> The historically black colleges enroll less than 20 percent of black undergraduates but confer one third of all baccalaureate degrees earned by Blacks. Based on 1984 statistics, two black colleges account for 40 percent of all Blacks earning degrees in dentistry; two account for 22 percent of all Blacks in medicine, four account for 16 percent of all Blacks in law and one accounts for 82 percent in veterinary medicine (NAFEO, 1988, p. i).

Figure 2.1 shows the growth in HBCU enrollment by level and control from 1954 to 1985. These data indicate that most of the enrollment growth in HBCUs occurred in the four-year public institutions. Other characteristics of HBCU enrollment include:

- A tendency towards small schools; nearly two-thirds of HBCUs enroll fewer than 2,000 students and 80 percent enroll fewer than 3,000;
- A graduate school population which is about nine percent of total enrollment and which has varied in proportion apppreciably in recent times (nationally, graduate school enrollment is about 13.5 percent of total enrollment);

FIGURE 2.1
ENROLLMENT IN HCBUs BY TYPE AND CONTROL: 1954 TO 1985



SOURCE: U.S. Department of Education, National Center for Education Statistics. Unpublished tabulations from the Higher Education General Information Survey.

- A male/female ratio of about 55:45, which is slightly more female than in non-HBCUs in the states which have HBCUs;
- A non-Black enrollment which is growing and which alone accounted for HBCU growth between 1975 and 1980. Declines since 1980 appear to be primarily among the Black population; and
- An overall enrollment which represented all 50 states despite being located in only 20 states. In 1979 about 83 percent of new HBCU students came from HBCU states with about 80 percent coming from the state in which the HBCU was located (Hill, 1985).

Resources

Much has been said concerning the historical financial neglect of the HBCUs. Analyses conducted for this report indicate that, at least on the basis of per student expenditures, the public HBCUs are no longer the neglected IHEs they once were. Table 2.2 displays the results of an analysis of HEGIS data which show total educational and general (E&G) expenditures per full-time equivalent student by institution type for HBCUs and non-HBCUs. For all institution types except the private four-year IHEs, the HBCUs spend more per student. These differences have been growing steadily over the three time periods analysed: 1975, 1980 and 1985.

The most recent in-depth analysis of HBCU funding was conducted by the National Center for Education Statistics in its 1982 update of the series of Federal reports on the Traditionally Black Institutions (TBIs), the NCES term for HBCUs. The report (Hill, 1985) covers the period 1860-1982 and contains data from prior Federal TBI surveys and new analyses. The balance of this section draws from those data.

TABLE 2.2

TOTAL EDUCATIONAL AND GENERAL EXPENDITURES PER FULL-TIME EQUIVALENT STUDENT BY TYPE OF IHE: 1975, 1980 AND 1985

(n in calculation)

Type of IHE	1975	1980	1985
Public Four Year			
All (466)	3420	5316	8047
HBCUs (35)	3478	5584	9003
Private Four Year			
All (1022)	4464	7039	11268
HBCUs (47)	4657	6808	10406
Public Two Year			
All (818)	2027	3089	4994
HBCUs (6)	1770	4148	6455
Private Two Year			
All (158)	2415	3688	6508
HBCUs (6)	2959	4146	7193

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

As Hill (1985) indicates, revenues increased considerably in higher education throughout the decades of the 1960s and 1970s. HBCU revenues from 1971-1981 increased 200 percent, which, after adjustment for inflation, netted about a 50 percent revenue increase. However, Hill indicates that an analysis of unpublished data reveals that increases in state appropriations to HBCUs did not match those to non-HBCUs in the same states during this period -- a 48 percent constant dollar increase for HBCUs versus a 62 percent such increase for non-HBCUs.

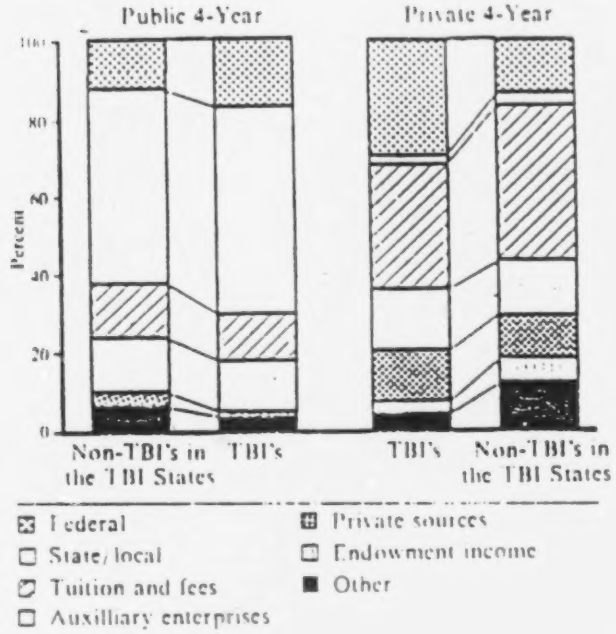
Figure 2.2 compares FY 1981 four-year TBI (HBCU) revenues to those of other institutions in the HBCU states (the latest year for which such comparisons are currently available). The largest source of revenues for public HBCUs were government agencies that provided 71 percent (exclusive of student aid). Students provided another 25 percent through tuition and fees, room and board and other auxiliary enterprises. For private HBCUs the major revenue source was students, who provided 48 percent of the revenue. The private HBCUs received a much larger share of their revenues from government sources than did private non-HBCUs. In the non-HBCUs endowment income contributed twice the percent of revenue than in HBCUs - six percent versus three percent.

Figure 2.3 compares FY 1981 four-year TBI (HBCU) expenditures to those of other institutions in the HBCU states. Among HBCUs, the largest expenditures are for instruction at 40 percent in public and 34 percent in private institutions. The non-HBCU institutions spent slightly more on instruction and research than the HBCUs. The HBCUs spent more for student scholarships, institutional support and student services.

In summary, public HBCUs no longer seem to have fewer resources to spend on a per student basis. They do, however, receive a greater share

FIGURE 2.2

SOURCES OF REVENUE OF 4-YEAR TBIs AND NON-TBIs IN THE TBI STATES, BY CONTROL: FISCAL YEAR 1981



Source: Susan T. Hill. The Traditionally Black Institutions of Higher Education 1860 to 1982. National Center for Education Statistics, 1985, Chart 5.2, p. 59.

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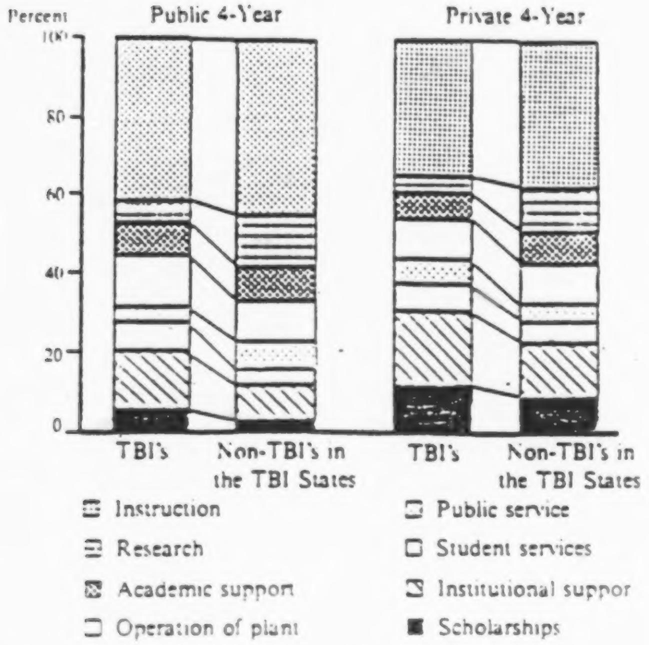
FIGURE 2.3

PURPOSES OF EDUCATIONAL AND GENERAL (E&G) EXPENDITURES
OF 4-YEAR TBIs AND NON-TBIs IN THE TBI STATES, BY CONTROL:
FISCAL YEAR 1981



Source: Susan T. Hill. The Traditionally Black Institutions of Higher Education 1860 to 1982. National Center for Education Statistics, 1985, Chart 5.3, p. 61.

of their resources from government agencies than do non-HBCU public IHEs in the same states. Further, they also differ from other non-HBCU public IHEs in that they spend a greater share of their resources on scholarships and institutional support than the non-HBCUs and a lesser share on instruction and research.

Outcomes

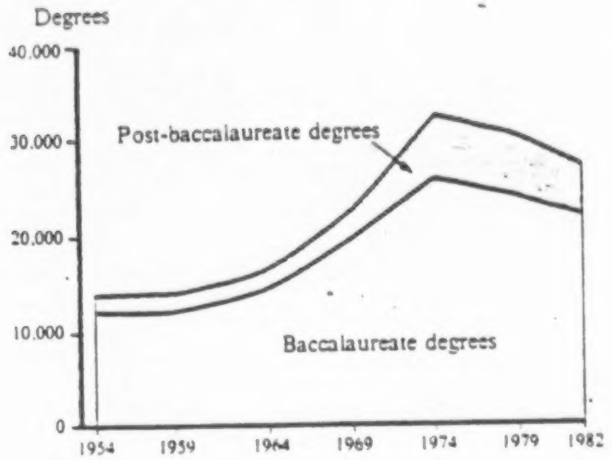
HBCUs account for about 35 percent of all bachelor's degrees currently granted to Black students annually. According to Fleming, as recently as 1967, 80 percent of all bachelor's degrees awarded annually to Blacks were awarded by the HBCUs. Figure 2.4 displays the trend in degree production from 1954 to 1982 (the latest year for which HBCU degree production is currently available). As with enrollment, it increased during the 1960s and peaked in 1974, declining about 20 percent since then. Today, HBCUs award approximately 21,000 bachelor's degrees, 4,000 master's degrees, and 100 doctorates annually.

Table 2.3 indicates that as of 1982 the distribution of the most popular fields of study for bachelor's degree recipients was relatively similar across HBCUs and non-HBCUs. This was a change from the pre-1954 period when the HBCUs produced a disproportionate amount of teachers, ministers, and other professionals such as doctors and lawyers since they were, in the states where they were predominantly located, the only institutions Blacks could attend.

The HBCUs confer about 30 percent of the master's degrees awarded to Blacks annually. Of the approximately 4,000 master's awarded by HBCUs each year, over half are awarded by only eight HBCUs. The fields of study in which master's degrees are awarded are highly concentrated.

FIGURE 2.4

BACCALAUREATE AND POST-BACCALAUREATE DEGREES
AWARDED BY TBIS: 1954 TO 1982



Source: Susan T. Hill. The Traditionally Black Institutions of Higher Education 1860 to 1982. National Center for Education Statistics, 1985, Chart 3.1, p. 29.

TABLE 2.3

PERCENT DISTRIBUTION OF BACHELOR'S DEGREES CONFERRED
BY HBCUs AND NON-HBCUs IN THE HBCU STATES, BY DISCIPLINE: 1982

Discipline	HBCUs	Non-HBCUs in the HBCU States
Total Number	22,047	380,335
Total Percent	100	100
Business and Management	26	25
Education	17	13
Social Sciences	11	9
Engineering	7	8
Public Affairs and Services	7	4
Biological Sciences	5	4
Health Professions	4	7
Psychology	4	4
Communications	3	4
Letters	2	4
Physical Sciences	2	3
Home Economics	2	2
Computer and Information Sciences	2	2
Fine and Applied Arts	2	2
Mathematics	2	1
Agriculture and Natural Resources	1	2
Interdisciplinary Studies	1	3
Architecture and Environmental Design	1	1
Theology	0	1
Foreign Languages	0	1

Source: Susan T. Hill. The Traditionally Black Institutions of Higher Education, 1860 to 1982. National Center for Education Statistics, 1985, Table 3.1, p. 35.

In 1982 the field of education accounted for over 50 percent of the degrees. Education degrees, along with those in business, public affairs, and the social sciences, accounted for 80 percent of the master's degrees conferred by HBCUs each year - this compares with 65 percent for these fields in the non-HBCUs in the same states (Hill, 1985).

In summary, while HBCUs have declined in terms of relative impact in the production of minority college graduates, it is clear that their contribution to the education of minorities remains significant. Obtaining a better understanding of this unique role of the HBCUs and how it is sustained may provide helpful input to the effort to increase the numbers of minority college graduates. Therefore, the next section reviews several research studies that have compared the response of Black students to their respective educational experience in HBCUs and in majority white institutions.

Black Students in Predominantly Black IHEs Compared to Those in Predominantly White IHEs

As colleges and universities became increasingly desegregated during the late 1960s and 1970s, concern turned from the process of integration to the outcomes of integration for Black students. As Black enrollment increased in institutions which were previously almost exclusively white, educators and researchers began to ask about the results of the educational experience for Blacks and also about what unique role, if any, remained for the HBCUs. Three significant studies which address these questions were conducted and reported during the first half of the 1980s.

The Tennessee Higher Education Commission conducted a study directed by Michael Nettles of "Causes and Consequences of College Students'

Performance" which was sponsored by the Ford Foundation and the Southern Education Foundation. The study focused on Black and white students' attrition, progression, and GPAs in 30 colleges and universities in 10 southern and border states. It involved data from over 4,000 students.

Jacqueline Fleming, a psychologist specializing in the study of individual differences, conducted a four-year study of Black students sponsored by the Carnegie Foundation. The study consisted of surveys and tests of 3,000 students in 15 colleges in four states "with different social mores and attitudes towards black education: Georgia, Texas, Mississippi, and Ohio" (Fleming, 1984, p. x).

Walter Allen studied academic performance, racial attitudes, and college satisfaction in a national sample of 1,600 Black students who attended predominantly white and historically Black state supported universities. Allen's study, which is the most recent of the three (reported 1986), was sponsored by the Southern Education Foundation and the Mott and Ford Foundations.

The following paragraph (which in the original contains 22 citations) taken from the introduction to the Allen study succinctly summarizes much of what is known about the differences between Black and white students and between Black students on Black and white campuses:

> Black students on predominantly white campuses continue to be severely disadvantaged relative to white students in terms of persistence rates, academic achievement levels, enrollment in advanced degree programs and overall psycho-social adjustments. Black students on historically black campuses are disadvantaged relative to students (both black and white) on white campuses in terms of family socioeconomic status, high school academic records, caliber of university instructional faculty and facilities, academic specializations selected, and enrollment in advanced study (Allen, 1986, p. 2).

What has been clearly documented is that HBCUs, as was stated in the introduction to this section, continue to struggle with "the many unique handicaps suffered by their students" (Thompson, 1986, p. 19). As Allen states, "Black students who attend historically black colleges are disadvantaged economically compared to black and white students who attend white colleges [and] typical black students on black campuses have lower standardized test scores and weaker high school backgrounds than do typical black students on white campuses" (Allen, 1986, p. 8).

What Allen does not describe in his introduction are the advantages each of these studies found for Black students in HBCUs compared to Black students in predominantly white institutions. Findings related to HBCU student psycho-social adjustment, and, in the case of the Fleming study, cognitive growth, are especially relevant for they identify a special role that only the HBCUs seem to fill for Black students.

The findings of the Tennessee study are the most detailed about Black achievement in various types of IHEs. Tables 2.4 and 2.5 display the study's findings for attrition and progression in predominantly Black and predominantly white IHEs:

The Tennessee investigators found:

- Attrition to be higher and progression rates to be lower for Blacks generally than for whites; and
- The highest attrition rates and lowest progression rates overall to be in predominantly Black public colleges and universities.

This study also found differences in GPAs among the institutions studied. While the highest GPA rates for Blacks were found in the Black private colleges, these rates were lower than the lowest GPA rates found

TABLE 2.4

COMPARISON OF BLACK AND WHITE STUDENT ATTRITION RATES AT PREDOMINANTLY BLACK AND PREDOMINANTLY WHITE COLLEGES AND UNIVERSITIES

	Attrition Rates by End of					
	1st Year		3rd Year		5th Year	
	Black Students	White Students	Black Students	White Students	Black Students	White Students
Overall for All Institution Types	26.5	20.3	43.5	35.3	55.7	38.4
Students Attending Predominantly Black Universities	28.9	54.8	46.3	73.1	61.0	84.8
Students Attending Predominantly White Universities	21.5	20.0	36.0	34.9	45.3	38.4

Source: Michael T. Nettles. Causes and Consequences of College Students' Performance. Tennessee Higher Education Commission, undated.

TABLE 2.5

COMPARISON OF BLACK AND WHITE STUDENT PROGRESSION RATES AT PREDOMINANTLY BLACK AND PREDOMINANTLY WHITE COLLEGES AND UNIVERSITIES

	% Sophomores In Fall, 2nd Year*		% Seniors In Fall, 4th Year*		% Graduated In 4 Years		% Graduated In 5 Years	
	Black	White	Black	White	Black	White	Black	White
Overall progression rates for all institution types	56.0	71.3	52.4	64.5	29.4	42.8	35.3	56.1
Students attending predominantly Black universities	57.4	57.2	51.4	40.3	27.0	18.7	28.6	14.2
Students attending predominantly white universities	53.9	71.5	56.0	65.3	35.6	43.1	48.6	56.5

* Reflects mean percent of those who had not dropped out of school who were classified as indicated. Actual progression rate is lower due to attrition (see Table 2.5).

Source: Michael T. Nettles. Causes and Consequences of College Students' Performance. Tennessee Higher Education Commission, undated.

for whites (which were found at predominantly white public universities). In general, this study, which is probably the most methodologically rigorous of the three, found that the disadvantages Black students bring to HBCUs do affect their performance in these institutions. Compared to white students, Black students generally drop out of college sooner, progress slower and receive lower grades - this occurs whether the student is in an HBCU or in a predominantly white institution, although Blacks in private HBCUs progress faster than Blacks on white campuses and Blacks in public and private HBCUs receive better grades than Blacks on white campuses.

The Fleming study, which was the first and most intensive, in terms of direct student contact -- each of the 3,000 students studied underwent four-to-eight hours of testing and interviews over several sessions -- found some very unexpected effects in HBCUs. Essentially, the study found that Black students in Black schools show more intellectual growth and academic progress than their counterparts in white colleges as measured by grades and a variety of tests of intellectual functioning.

Neither the Nettles nor the Allen study looked at the question of intellectual growth in the manner Fleming investigated it. Fleming, in a cross-sectional design, measured intellectual ability, using three tests of cognitive skill, in freshmen and seniors, and made judgments about the impact of the college experience on intellectual growth. The other two studies measured academic performance by looking at reports of grades, GPAs, course progression, and persistence rates. Unfortunately, Fleming's cross-sectional design means that the changes she noted in intellectual growth were found in different sets of students who were in

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different years of school. With such a design it is more difficult to attribute the cause for the change found to the IHE experience than with a longitudinal design where the same students are followed over time.

While Fleming found strong indications in her data that HBCUs foster intellectual growth, this finding is not accepted fully by critics of her study. They fault the cross-sectional methodology, sampling procedures and measures used and therefore approach the study's findings with caution (Nettles and Baratz, 1985). Nor are Fleming's findings confirmed by the other studies of the HBCUs.

The Allen study, while more recent, is also more limited in scope. It surveyed, through questionnaires, about 1,600 Black students in state supported Black and white institutions to determine three college outcomes: academic performance, satisfaction with college, and racial attitudes. Its findings are consistent with the Tennessee finding that Black students on predominantly Black campuses get better grades than do Black students on predominantly white campuses. However, the study did not investigate the academic growth issue Fleming emphasizes. Generally, the study found:

- o Black students on Black campuses are considerably more disadvantaged in terms of what they bring to the campus in their background and in terms of the human and physical resources available to them on campus. However, they get better grades and experience greater satisfaction with college life than do Black students on white campuses (Allen, 1986).

Allen states clearly the situation that Black students face when picking a college experience:

> Life is full of choices and tradeoffs. This point is forcefully made by our comparisons between black and white campuses. In the case of black campuses, black students purchase psychological

> well-being and spiritual affinity at the cost of less than favorable physical circumstances. In the case of white campuses, black students purchase richly endowed physical circumstances and bureaucratic efficiency at the cost of less than favorable interpersonal relations and peace of mind (Allen, 1986, p. 79).

While it is impossible from the current studies of Black achievement to identify with certainty the role of HBCUs in fostering Black academic achievement, it does seems reasonable to conclude from the findings of these three studies that HBCUs continue to play a special role in the education of Blacks. As Fleming noted, "black colleges evolved under pressures, both financial and social, to be nonintellectual, non-liberal-arts schools. Nonetheless, liberal education survived at enough black colleges to impart the tools necessary to create a black middle class" (Fleming, 1984, p. xiii).

Today, the children of middle class Blacks predominantly go to white colleges. However, according to Nettles and Baratz (1985), HBCUs continue to:

- Provide a choice for students to attend college in a supportive atmosphere;
- Educate students that white institutions have largely ignored; and
- Produce a sizeable portion of the Black leadership.

Urban Community Colleges

As the data in Chapter 1 have shown, the two-year public college is the predominant type of institution enrolling minority students. These community colleges, as they are commonly called, reflect the attempt of many states to make higher education universally available. The institutions are located so that their students can commute and do not have to live away from home. Classes are offered at times of the day that permit the students also to earn a living in a regular job. The course offerings, while including traditional liberal studies types of courses, are heavily oriented to career and vocational needs. In essence, the community college is designed to serve the type of student who either cannot afford the live-away college experience or who, initially, does not feel the four-year bachelor's degree is required for his or her career aspirations. Access to these institutions, in the states that have fostered their development, can be said to be nearly universal.

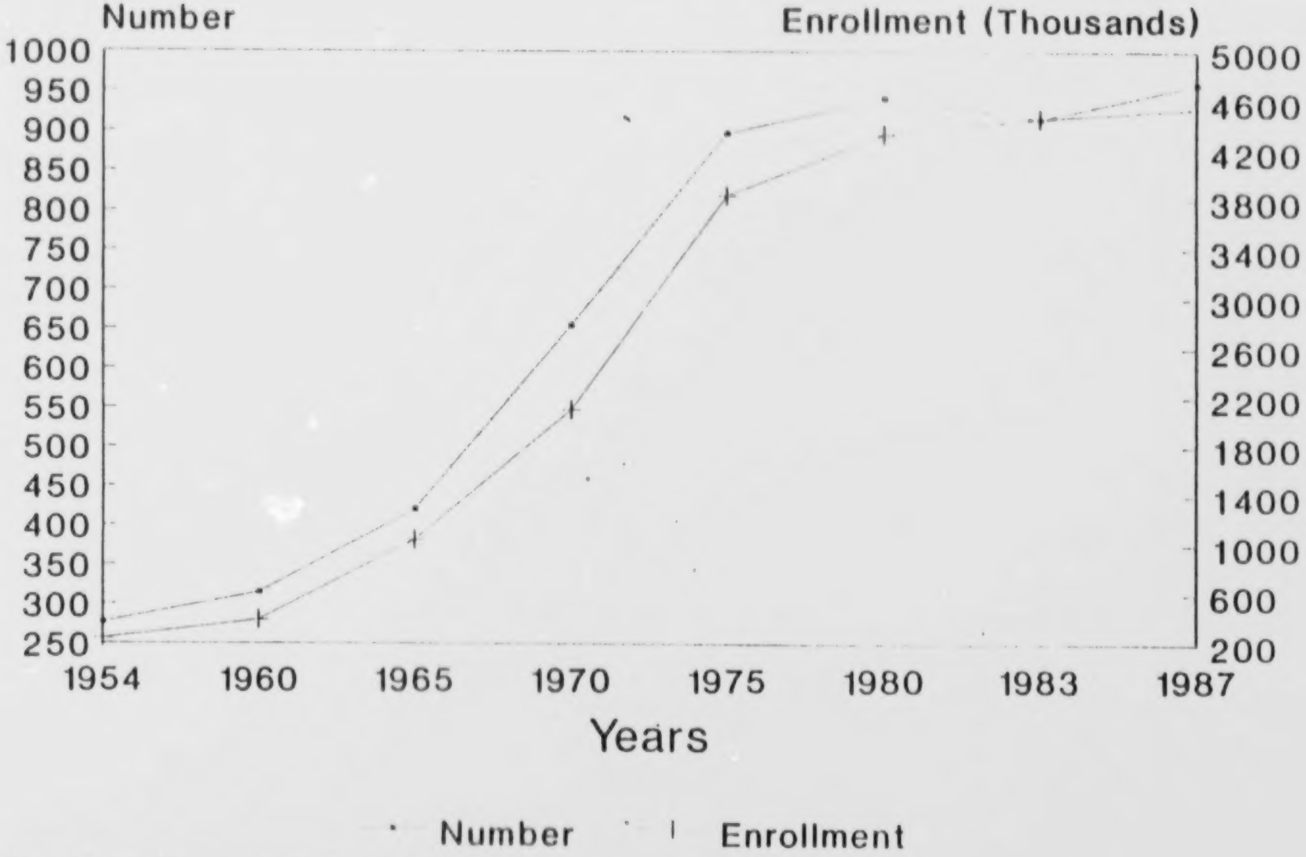
This section of the chapter examines, briefly, the role of the community college, and particularly the role of the urban community college in the postsecondary education of minorities.

Community College Development and Enrollment

Since the mid-1950s, the growth in community colleges and their enrollment has been phenomenal. Figure 2.5 shows the number of public two-year colleges from 1954 through 1987. These data indicate that enrollment in public two-year schools has grown from less than 250,000 students in 1954 to about 4.5 million students in 1987. In 1954 public two-year institutions accounted for just 10 percent of total IHE enrollments. Today, they account for 36 percent.

Data in Figure 2.5 show that the number of two-year public colleges has also grown dramatically, from 277 in 1954 to 959 in 1987. To some degree, this growth is the result of a conscious policy decision made by some states during the 1960s and 1970s to invest in community college systems as the vehicle to open access to higher education to minorities.

Figure 2.5. Number of Public 2 Year IHEs and Enrollment: Fall 1954 - 1987*



*Note: Beginning in 1972, includes 2 year branches of universities and other 4 year institutions and enrollments in these branches are included.

Source: U.S. Department of Education, National Center for Educational Statistics. Higher Education General Information Survey.

Florida is a prime example of this philosophy. Today, Florida, the fifth most populous state in the country, stretching 400 miles across and over 700 miles top to bottom, has a state university system of nine four-year "upper division" institutions. By state policy, these schools can enroll only 40 percent of its baccalaureate bound high school graduates. The other 60 percent of Florida's college bound students enroll in the community college system, its "lower division," which has 28 institutions and numerous branch campuses. There is a Florida community college branch within a reasonable commute of nearly all of its over 11 million citizens. Admission to these schools is open to any citizen of post high school age and tuition is very low. As a result of this policy, access to at least two years of a college education can be said to be universal in Florida.

Demographics and the Community College

Minorities constitute about 22 percent of the U.S. population aged 18-24 years old. Minorities in four-year IHEs represent about 15 percent of the student population (see Appendix Table A.6). However, in two-year institutions their representation (22 percent) is about that of the general population of 18 to 24 year olds.

Hispanics and American Indians rely more upon the community college system than do Blacks and Asian Americans. Figure 1.7 indicates that in 1986 55 percent of Hispanics in higher education were in community colleges along with 56 percent of American Indians enrolled in these IHEs. By contrast, only 43 percent of Blacks and 42 percent of Asian Americans were in these institutions.

Many minority groups tend to concentrate in urban centers. According to the American Association of Community and Junior Colleges, 77 percent of all Blacks, 83 percent of Hispanics and 80 percent of Asian Americans live in urban areas. Ten metropolitan areas account for nearly one half the Hispanics in the United States: the population of five states - New York, Texas, Florida, California, and Illinois - represent 75 percent of the Hispanic population. The Asian population is concentrated in Hawaii and six continental states (California, Texas, Washington, Illinois, New York and New Jersey). Blacks are distributed throughout the country but are also heavily urbanized -- twenty-eight predominantly northern or southern cities have Black populations over 150,000 (AACJC, 1988, p. 4).

These demographics have helped create the phenomenon of the urban community college as the school of access and/or choice for large numbers of the minority population seeking to enroll in postsecondary education. For example, the California community college system, which enrolls 40 percent of California high school graduates who attend IHEs, enrolls 80 percent of the state's minority high school graduates who attend IHEs.

Our analysis of data from HEGIS indicates that in 1986 there were 83 non-HBCU public two-year IHEs which were predominantly minority in enrollment - in 1976 only 29 IHEs were in this category. There are currently little data about these institutions as a group. However, there are a few sources from which some critical issues which pertain to minority participation in postsecondary education and the role of the urban community college can be identified.

The Role of the Urban Community College

A review of the community college literature of the 1980s is striking in the similiarity of its language and constructs to those used in much of the HBCU literature. Community colleges see themselves as having a very special role in the higher education experience of large numbers of students who leave the public secondary schools unprepared, academically, for the college experience (Florida Postsecondary Education Planning Commission, 1986). This is especially the case in the urban community college, where large numbers of "open enrollment" minority students are products of the public school systems.

This role involves providing at least four types of educational services to their students. For a large number of students community college study is the initial step in a program which is expected to lead to the bachelor's degree. For another large group the community college experience is viewed as providing a terminal vocational program leading to immediate employment upon graduation. For others, the community college provides either remediation or, simply, personal enrichment.

Data on the percent of community college students intending to continue on to four-year college are inconclusive. There seems to be general agreement that the percent of students pursuing such options has decreased and that the percent enrolling in vocational programs with the intent of finding a well paying position has increased since the late 1960s or early 1970s.

The latest study by Astin (1987) of first-time community college freshmen indicates 75 percent say they aspire to the bachelor's degree. In another study of both full and part-time students only 36 percent indicate plans to continue beyond the community college ; however, 56 percent of those age 21 and under had such plans (Cohen and Palmer, unpublished). In a study of 24 predominantly minority urban community colleges, 75 percent of the students aspired to the bachelor's degree (Center for the Study of Community Colleges, 1985). This study found no minority-white differences in these aspirations.

One of the several important roles community colleges play, because of their open access tradition, is to enroll the poorly prepared minority student who aspires to a bachelor's degree. These schools then attempt to provide the remediation necessary to retain these students and eventually support their transfer to a four-year institution. In many community colleges, the program of studies has been sufficiently articulated between the two institutions so that students do not have to begin studying anew to earn the bachelor's degree. This ideal role works for some community college students. However, it does not work for all.

Minority students most frequently enroll in two-year institutions (see Fig. 7). In some large states, such as California and Florida, overwhelming percentages of minority students (80 and 76 percent, respectively) begin their college experience in the community college. Data on transfers to four-year institutions from these states show large numbers of students actually do move on to four-year institutions. However, the percentages that do, compared to those who initially indicate such a desire, is small.

Analyses of 1972 high school graduates previously conducted (Pelavin Associates, 1988) indicate that overall transfer rates from community colleges to four-year IHEs were about 25 percent. The rates for Black and Hispanic students were 18 and 14 percent, respectively. Adelman's 1988 analysis of 1972 high school graduates found that only 21.2 percent had transfered within 12 years of graduation. Other analyses by other researchers generally indicate transfer rates that range from 15 to 25 percent of all community college students or about 20 to 35 percent of those who say they want to transfer. The rates are less for minorities than for whites, with the exception of Asian Americans.

Studies of bachelor's degree attainment among those who were initially community college students also report a range of findings. Brenamen and Nelson (1981), using data from the National Longitudinal Study of the Class of 1972, compared the degree attainment of four-year freshmen with those who had entered an academic program in two-year schools. The respective rates of degree attainment within four and one half years were 44 percent and 16 percent. Even after controlling for student background and achievement Brenamen and Nelson found those entering a four-year school still had a 13 percent greater rate of attainment. Velez (1985) found the rates to be 79 percent and 31 percent, respectively, over a seven-year period with a difference of 19 percent after controlling for background and achievement variables. Alba and Lavin (1981), in a study of City University of New York students which controlled for demographic and academic characteristics, found 31 and 13 percent rates of attainment among four-year and community college entrants, respectively, after a five-year period. Pincus (1988) estimates that only 10 to 15 percent of community college students ever get a bachelor's degree and that no more than 20 to 25 percent of community college students who aspire to this degree ever get one; the rate for whites exceeds that of Blacks and Hispanics. However, it must be recognized that large numbers of students who enter community colleges are not sufficiently prepared to pursue a college degree and that many of these students are undoubtedly included among those who eventually earn the BA thanks to the community college's effort.

There are a variety of reasons for lower bachelor's degree attainment rates among community college students. As indicated, some of these reasons pertain to the nature of the students community colleges serve. Others concern institutional qualities that may require change. (Chapter 4 will provide a discussion of some community college strategies to enhance transfer and attainment rates.)

One of the greatest difficulties concerns articulation between community colleges and four-year colleges. Studies of community colleges indicate that the approach to students in the community college follows a nurturing model that is very different from the more rigid sink-or-swim approach of four-year college. These different approaches result in different cultures among the institutions which stand in the way of developing the ideal type of articulation arrangements between them. University professors are reported not to respect the community college's dedication to the student as opposed to the university faculty's dedication to the discipline (Florida Postsecondary Education Planning Commission, 1986).

Other transfer inhibitors concern the needs of the students in community colleges. New Jersey reports that 48 percent of the community college entrants in 1983 required remediation in one or more of four basic subjects (New Jersey Basic Skills Council, 1985). Florida reports a similar 50 percent remediation rate (Postsecondary Education Planning

Commission, personal communication, 1988). Richardson and Bender (1987) report that about one-half of those entering community colleges aspire to the baccalaureate degree but that fewer than half of those who so aspire engage in the behaviors associated with successful transfer, which include successful participation in remediation. They estimate that in institutions with high Black and Hispanic enrollment as many as 95 percent of those enrolled for six or more credit hours require remediation.

Remediation, retention, articulation, and transfer are the issues that underscore the role of the two-year institution in the participation of minorities in postsecondary education. HBCUs provide a nurturing and supportive environment for a significant number of Black students in college and also produce a disproportionate number of Black degree holders who seem to fare reasonably well in the work and social world beyond college. The urban community colleges attempt to perform a similar role for many other minority students.

However, they cannot, alone, provide access to the baccalaureate degree. As Richardson and Bender point out:

> The problem of minority underrepresentation among baccalaureate holders is a problem of access to four-year institutions rather than one of participation in a college experience. Access to four-year institutions for almost half of all minority students currently participating in higher education requires transfer from a two-year to a four-year institution (Richardson and Bender, 1987, p. 17).

Many of these students do not aspire to a four-year degree. For them the community college provides an opportunity for improved vocational preparation or simply for personal enhancement. For others access begins in the community college but the transfer hurdle remains a formidable one.

CHAPTER 3

FACTORS ASSOCIATED WITH MINORITY STUDENTS' COLLEGE ATTENDANCE

Overview

This chapter reviews data and other information associated with a variety of factors that have been hypothesized to account for the relatively lower college participation rates among Blacks, Hispanics, and other minority groups as compared to whites. Three sets of factors are explored:

- Those associated with the preparation of minorities for college participation including high school progression, program, and achievement;
- Two factors directly associated with access to college: segregation and student financial assistance; and
- Those which provide an alternative to going to college, including entering the military, the labor market or attending a proprietary school.

Since achievement has been found to be related to students' college-going behavior and is also related to a number of variables which are a part of a student's high school experience, this chapter analyzes various aspects of the high school preparation and achievement of minorities. It finds:

- Graduation rates among 18 to 19 year old Hispanics and Blacks are 49.8 and 62.7 percent, respectively, which are significantly below the white rate of 76.7 percent.
- The percent of students taking a college preparatory high school program has increased among all racial/ethnic groups and taking this program is associated with attending college.

- However, a stronger association than that between program track and college attendance is found between college attendance and taking two or more college preparatory mathematics courses. While 51 percent of white high school students take these courses only 27 percent of Black students and 29 percent of Hispanic students do so.

- While the gap between Black and white reading scores on NAEP assessments has been reduced, the average scores of Black and Hispanic 17 year olds are, for the most part, below those of white 13 year olds. The percentage of Black and Hispanic 17 year olds reading at the adept level is only one third and one half, respectively, of the percentage of whites (45 percent) reading at these levels which are associated with successful college participation.

- There still remains a substantial gap between white and minority performance on the Scholastic Aptitude Test (SAT), despite its closing somewhat over the past decade. The percent of minorities, except for Asian Americans, scoring above the 70th percentile on the SAT remains only about one quarter that of whites.

- Within the same income or academic achievement groups, Black high school graduates attend college in proportions equal to or greater than the proportions of whites who attend. For both Blacks and whites the proportion entering college increases with rising income or achievement levels.

Over the past 25 years segregation on college campuses, especially in the South, has been diminished substantially. As a result, it does not appear that de jure segregation, per se, is any longer a barrier to minority access to college.

Since 1965 there has been a substantial increase in the amount of Federal student financial assistance available to students with demonstrated need. Unfortunately, there is not yet a sufficient body of research available to permit a comprehensive understanding of the impacts of various forms of financial aid on the college going behavior of minorities. Research conducted on the total population of students generally shows that student financial aid:

- Increases the enrollment of low-income individuals; and

- Permits aid recipients to progress through college at a similar rate as non-recipients (who presumably do not need financial aid).

Analyses of alternatives to college going among minority students did not identify any data to suggest that the most commonly hypothesized alternatives could, in fact, be held to account for the gap between white and minority college going rates. Specifically:

- A review of military enlistments among Black high school graduates without prior military experience indicates that enlistment rates paralleled college going rates; rising and declining in tandem. Therefore, military service cannot be considered to be drawing qualified Black students disproportionately away from going to college.
- An analysis of labor market conditions suggests that, given previous behaviors, college going among minorities should have increased during the period of high youth unemployment in the mid-1980s, when, in fact, it fell or remained stable. Therefore, labor market alternatives do not seem to be drawing minorities away from colleges.
- Proprietary school enrollments have been increasing dramatically over the past decade. While higher achieving minority students attend proprietary schools at a slightly greater rate than higher achieving whites, it does not appear that proprietary schools are drawing significant numbers of qualified minorities away from going on to college.

Introduction

In Chapter 1 trends associated with minority participation were identified and discussed. Generally, the numbers and proportions of all minority groups enrolled in postsecondary education have increased substantially over the period from 1967 through 1986. However, enrollment levels of Black and Hispanic students are still well below those of white students. For example, in 1986, 28 percent of white persons 18 to 24 years old were enrolled in college compared to 22 percent of Black persons and 18 percent of Hispanic persons, 18 to 24 years old. In this chapter we explore some factors that have been suggested to be associated with the relatively lower college participation rates among Blacks, Hispanics, and other minority groups. Limitations in the availability of previously collected data restrict some of the analyses in this chapter to exploring hypotheses with data for Blacks and Hispanics only, or even for only Blacks.

The chapter consists of three sections. The first section explores issues of high school progression, program, and achievement in the context of preparation for college. The second section reviews two factors which directly affect minority students' access to college: segregation and student financial assistance. The final section of the chapter reviews several alternatives to college, such as military service, the labor market, and proprietary schools, to determine whether these alternatives are likely to be attracting students away from going to college.

High School Preparation and Achievement

Previous investigations have identified educational achievement and family background as an important predictor of college attendance (Manski and Wise, 1983; Thomas, 1980; Tierney, 1980; Radner and Miller, 1975; Sewell and Hauser, 1972). Similarly, a recent analysis of data from the longitudinal High School and Beyond (HS&B) study (see Appendix B for a brief description of the HS&B study) also concluded that among both Black and white students achievement and family income were important predictors of college attendance. Chaikind analyzed college attendance within achievement and income groups, looking at the lowest, middle, and highest thirds of each. The results of his analyses are contained in Table 3.1, which shows the percentage of 1980 high school graduates who attended college within four years of their high school graduation by race, reading achievement, and income level (Chaikind, 1987). From these analyses of HS&B data, Chaikind concluded that:

- Within the same academic achievement groups, Black high school graduates attend college in proportions equal to or greater than the proportions of whites who attend. For both Blacks and whites the proportion entering college increases with rising achievement levels (Chaikind, 1987, p. i).
- Within the same income groups, Black high school graduates attend college in proportions equal to or greater than the proportions of whites who attend college, according to HS&B data. For both Blacks and whites, the proportions entering college increases as family income increases (Chaikind, 1987, p. i).

When considering both achievement and income simultaneously, Chaikind finds that the percentage of Blacks attending college is equal to or exceeds the white percentage in all cases except for the highest achievement and income group, where the ratio of Black to white college going is .97. In other cases, the ratio of Black and white college going always exceeds one, ranging from 1.73 for those in the middle third of income level and lowest third of achievement level to 1.09 for those in the middle third of income and highest third of achievement. It should be noted, however, that since both income and achievement among Black students tends to be lower than among white students, the overall ratio of Black to white college going is only .91.

It is important to know that postsecondary participation of Black students is about that of white students when achievement and family

TABLE 3.1

PERCENT OF 1980 HIGH SCHOOL GRADUATES ENROLLING IN COLLEGE WITHIN FOUR YEARS AFTER HIGH SCHOOL GRADUATION, BY RACE, READING ACHIEVEMENT AND INCOME LEVEL

Reading Achievement	Lowest Third Income Level	Black/White College Attendance Ratio	Middle Third Income Level	Black/White College Attendance Ratio	Highest Third Income Level	Black/White College Attendance Ratio	All Income Groups	Black/White College Attendance Ratio
All Students	42.86	NA	46.08	NA	68.89	NA	56.30	NA
Lowest Third	27.12	NA	26.84	NA	45.05	NA	33.67	NA
Middle Third	42.90	NA	46.51	NA	68.26	NA	55.73	NA
Highest Third	63.96	NA	63.25	NA	79.97	NA	72.81	NA
White (Total)	43.79	NA	46.01	NA	69.26	NA	57.73	NA
Lowest Third	21.02	NA	23.59	NA	43.99	NA	32.29	NA
Middle Third	41.15	NA	43.09	NA	67.40	NA	54.45	NA
Highest Third	62.38	NA	63.46	NA	80.38	NA	73.13	NA
Black (Total)	44.95	1.03	51.55	1.12	66.97	0.97	52.76	0.91
Lowest Third	33.74	1.61	40.70	1.73	53.35	1.21	40.25	1.25
Middle Third	52.30	1.27	64.27	1.49	78.54	1.17	63.86	1.17
Highest Third	74.98	1.20	69.14	1.09	78.11	0.97	74.44	1.02

From: Stephen Chaikind. College Enrollment Patterns of Black and White Students. DRC, 1987.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond, unpublished tabulations from 1980 senior cohort.

income are controlled for. The distributions of these two variables, achievement and family income, are different for white and minority students. Achievement is strongly related to a number of other variables, many of which are part of a student's high school experience. For example, an American College Testing (ACT) Service analysis (1988) explicitly relates mathematics courses taken to higher ACT test scores. In addition, analyses of public and private school outcomes (Coleman et al., 1982) implicitly links high school track with student achievement. Therefore, in this section we explore the concept of high school preparation including actual courses taken, in addition to exploring measures of high school achievement.

This section examines several measures of high school preparation moving from the simple measure of obtaining a high school degree to measures of actual course taking. Following these analyses, two measures of minority achievement are explored to further investigate the extent to which high schools are preparing minority students for college.

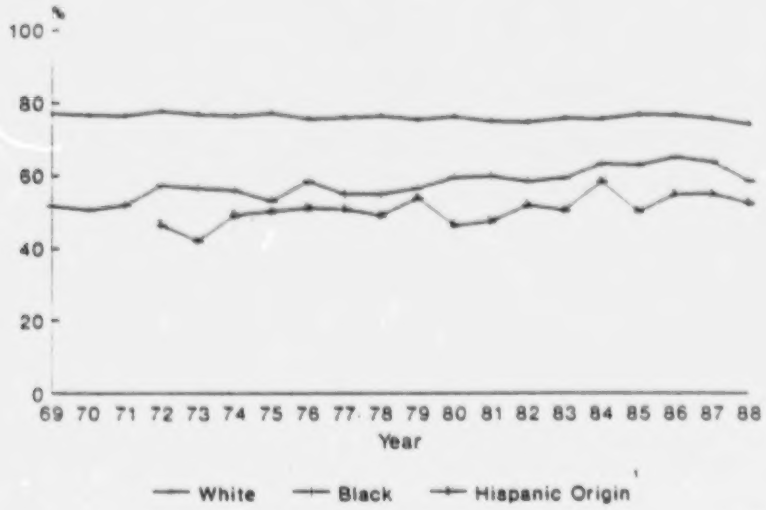
High School Completion and Progression

Obtaining a high school degree is the most straightforward and simple measure of high school preparation. Data in Table 1.2 indicate that in 1986 graduation rates among white persons 18 to 24 years old exceeded those of Black and Hispanic persons 18 to 24 years old (83 percent versus 76 percent and 60 percent, respectively). However, these data conceal a greater discrepancy among graduation rates when "normal" progression patterns are considered.

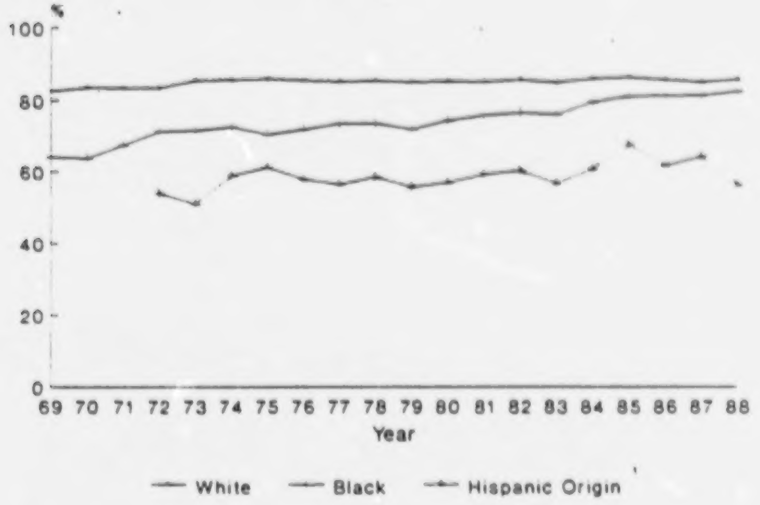
Figure 3.1 displays graduation rates from 1969 to 1985 for whites and Blacks, and from 1972 to 1986 for Hispanics, for two different age groups: 18 to 19 years old and 20 to 24 years old. Completion rates among whites 18

Figure 3.1
Percent of High School Completion by Race/Ethnicity for Age 18 to 19 and 20 to 24: 1969 to 1988

Age 18 to 19



Age 20 to 24



[1] May be of any race.

SOURCES: U.S. Department of Commerce, U.S. Bureau of the Census. Current Population Reports, Series P-20 and Current Population Surveys (Unpublished tabulations) to 19 years old was 76.7 percent. Among Blacks it was considerably lower at 62.7 percent and for Hispanics it was only 49.8 percent. Since 1969 the white rate has remained relatively stable but the Black rate has risen about ten percentage points from 51.5 percent to 62.7 percent. The rate for Hispanics has fluctuated but seems relatively constant at about the 50 percent level since 1975. Overall, the graduation rates of 18 to 19 year old Blacks and Hispanics still are appreciably behind the white rates for the same age group.

Black and Hispanic students are significantly less likely to graduate from high school with their school-entering age cohort than are white students. Large numbers of minority youth are either not graduating from high school at all (for example, 40 percent of Hispanics) or are taking longer than normal to obtain their high school degree. Thus, there are large numbers of minority youth who are removed from the pool of the traditionally college bound cohort age 18 to 19 years old.

Another way of looking at school progression differences among whites and minorities is to examine the modal grade of those students who are still in school. A modal grade is the grade at which the majority of students in a given age group are enrolled (e.g., ninth grade for 14 year olds). Table 3.2 displays the pattern of modal grade distribution for Blacks and whites from 1975 to 1988 in two different age groupings. Several points can be made:

- As they move through school, Black students fall further behind than do white students - 40 percent are one or more grades behind in grades 9-12 compared to 28 percent of whites;

Table 3.2

Percent of Students Less Than Modal Grade by Race and Gender: 1975-1988

Cohort	Percent Less Than Modal Grade		
White (Ages 10-13) Pooling Grades 5 through 8	**Male**	**Female**	**Total**
1975	22.4	13.8	18.1
1977	21.9	13.7	17.9
1979	21.8	15.5	18.7
1981	26.4	21.3	24.1
1983	27.9	19.5	23.8
1985	28.0	20.0	24.1
1986	29.9	21.2	25.6
1987	30.8	22.2	26.5
1988	32.6	22.7	27.7
White (Ages 14-17) Pooling Grades 9 through 12			
1975	26.4	17.0	21.8
1977	21.9	16.0	20.2
1979	21.8	14.6	20.5
1981	26.4	18.6	22.6
1983	27.7	16.6	22.3
1985	28.3	19.1	23.8
1986	29.8	20.4	25.1
1987	28.4	20.1	24.3
1988	31.3	20.4	25.9
Black (Ages 10-13) Pooling Grades 5 through 8			
1975	31.9	25.0	28.5
1977	30.8	21.5	26.1
1979	37.7	23.9	30.8
1981	33.7	30.8	32.2
1983	44.4	29.5	36.9
1985	41.0	33.3	37.2
1986	41.7	32.8	37.3
1987	40.9	28.3	34.6
1988	41.7	30.9	36.3

Table 3.2 (Continued)

Percent of Students Less Than Modal Grade by Race and Gender: 1975-1988

Cohort	Percent Less Than Modal Grade		
Black (Ages 14-17) **Pooling Grades 9 through 12**	**Male**	**Female**	Total
1975	42.1	31.5	36.8
1977	36.6	28.3	32.5
1979	43.1	26.3	35.1
1981	42.5	33.4	38.0
1983	42.9	29.9	36.4
1985	42.7	35.3	39.1
1986	46.6	30.0	38.3
1987	44.0	31.0	37.5
1988	45.1	35.7	40.4

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (Various Years)."

- These discrepancies are established by the completion of junior high, if not earlier, and continue to grow through high school; and
- Among Black males in high school, almost 45 percent are one or more grades behind.

From these data it appears that for substantial numbers of Black students the pattern of educational preparation reflects a slower rate of progression than for whites. Further, while high school graduation rates may be improving for Black students, the progression rates do not appear to be doing so. Problems in the progression rates of many minority students begin before high school. For example, by high school about one-third of Black males are one or more grades behind their age cohort.

High School Programs

Since there is intended to be a relationship between the various high school programs of study ("tracks") and the preparation required to attend college, any investigation of high school preparation as a factor in determining college attendance must consider participation rates in these various high school programs. Table 3.3 displays the percentages of students in the high school classes of 1972, 1980, and 1982 who reported that they were enrolled in a general program, an academic or college preparatory program, or a vocational program. Several points are evident from an examination of this table:

- Academic or college preparatory program participation has increased among all groups, whites, Blacks, and Hispanics and Asian Americans, although the increases are small;
- Vocational program participation has also increased among all groups (although recent unpublished data indicate enrollments in vocational programs may now be declining overall);
- Participation in a general program has declined across all groups; and

Table 3.3

Percent of Students Reporting Academic, General, or Vocational High School Program by Race/Ethnicity for the Classes of 1972, 1980 and 1982

Race/ Ethnicity	Percent of Students Reporting Program by Year								
	Academic or College Preparatory			General			Vocational		
	1972	1980	1982	1972	1980	1982	1972	1980	1982
White, non-Hispanic	43.7	39.9	44.1	33.8	36.5	29.1	22.8	23.6	26.8
Black, non-Hispanic	32.5	34.0	36.7	35.8	34.7	24.0	31.7	31.3	38.2
Hispanic	24.8	29.5	27.4	43.6	38.8	33.8	31.7	31.6	38.9
Asian American	N/A	52.4	62.9	N/A	31.0	20.2	N/A	16.6	16.9
Total	41.5	38.7	46.3	34.5	36.5	25.6	24.0	24.9	28.1

Source: U.S. Department of Education, National Center for Education Statistics and National Longitudinal Study of the High School Class of 1972, Fourth Follow-up; High School and Beyond Survey: Senior Cohort, Third Follow-up and Sophomore Cohort, Third Follow-up.

- Despite these changes, white and Asian American students remain much more likely than Black or Hispanic students to enroll in a college preparatory program. In the class of 1982, 63 percent of Asian Americans and 44 percent of whites pursued a college preparatory program, compared to 37 and 27 percent of Blacks and Hispanics, respectively.

Table 3.4 contains analyses from HS&B that show the percent of students in the class of 1982 who attended college immediately following their high school graduation, i.e., summer or fall, 1982, and who attended college for any period of time in the four years following their high school graduation, i.e., between June 1982 and spring, 1986 by high school program and race/ethnicity. As expected, students in the academic program attended college more frequently. Paralleling their relative rates of enrollment in the academic program, the rate of Asian Americans attending college is higher than any other group, followed by whites, Hispanics, and Blacks. (The rates for white and Black students attending college immediately after high school graduation, 51 and 35 percent, respectively, in the HS&B study are almost identical to the analogous rates from the October 1982 CPS, 51 and 36 percent. The similarity of these rates increases our confidence in the national representativeness of the respective data sources.)

The same general pattern is found within all three types of high school programs: Asian American students most frequently attended college followed by white students and then either Black or Hispanic students depending on the time frame and the high school program. For example, immediately following high school graduation Asian American college preparatory students most frequently attended college followed by white, Hispanic, and Black students, respectively.

Table 3.4

Percent of Class of 1982 Attending College Immediately Following High School Graduation and at Any Time During the Four Years After High School Graduation by High School Program and Race/Ethnicity

		College Attendance of Students in Each High School Program	
	Percent in Track	Immediately Following High School	Any Time During Four Years After High School
HIGH SCHOOL PROGRAM BY RACE/ETHNICITY			
Academic or College Preparatory			
Total	46.5	70	80
White, non-Hispanic	44.1	73	83
Black, non-Hispanic	36.7	50	64
Hispanic	27.4	62	74
Asian American	62.9	88	94
General			
Total	25.6	35	50
White, non-Hispanic	29.1	36	51
Black, non-Hispanic	24.0	25	47
Hispanic	33.8	28	44
Asian American	20.2	64	72
Vocational			
Total	28.1	24	38
White, non-Hispanic	26.8	24	38
Black, non-Hispanic	38.2	25	41
Hispanic	38.9	23	34
Asian American	16.9	28	62
Total All Programs	100		
White, non-Hispanic		51	63
Black, non-Hispanic		35	52
Hispanic		37	50
Asian American		72	84

Source: U.S. Department of Education, National Center for Education Statistics. High School and Beyond Survey: Sophomore Cohort, Third Follow-up.

The preceding analyses and discussion show that the type of high school program a student pursues is an indicator of whether the student is likely to attend college. Another indicator of a student's preparation for college is the pattern of academic courses being taken. To permit analysis of course-taking patterns the HS&B study collected high school transcripts of students in the class of 1982. Students were classified as having taken college preparatory mathematics courses if the courses they took in high school included at least two of the following: algebra 1, geometry, algebra 2, trigonometry, or any more advanced course. The relatively small percentage of minority students, except Asian Americans, that have taken the college preparatory mathematics courses is another indicator of minority students' lack of preparation for college. In the class of 1982 over 50 percent of white students took college preparatory mathematics courses compared to only 29 percent of Hispanic students and 27 percent of Black students.

To investigate how good an indicator of college attendance taking mathematics courses is, the percentage of students in the class of 1982 who attended college immediately following high school graduation, and at any time during the four years after high school graduation, by type of mathematics courses taken and race/ethnicity are presented in Table 3.5. Almost three-quarters of all the students who took college preparatory mathematics courses went directly on to college after high school, although the proportions of Black and Hispanic students going directly to college are somewhat lower (68 and 60 percent, respectively). Over eighty percent of all students who took college preparatory mathematics attended some college during the four years following graduation except for Hispanic students (only 74 percent). Thus, if a student takes the

Table 3.5

Percent of High School Class of 1982 Who Attended College
Immediately Following High School Graduation and at Any Time
During the Four Years After High School
By Type of Mathematics Courses and Race/Ethnicity

Type of Mathematics Courses by Race/ Ethnicity	Percent Taking Courses	College Attendance of Students With and Without College Preparatory Mathematics Courses: Immediately After High School	Any Time During Four Years After High School
College Preparatory			
Total	46	72	84
White, non-Hispanic	51	73	84
Black, non-Hispanic	27	68	81
Hispanic	29	60	74
Asian American	66	87	94
Not College Preparatory			
Total	54	29	43
White, non-Hispanic	49	30	43
Black, non-Hispanic	73	24	42
Hispanic	71	29	41
Asian American	34	39	62

Source: U.S. Department of Education, National Center for Education Statistics. High School and Beyond Survey: Sophomore Cohort, Third Follow-up.

"right" courses, the probability of his or her attending college at some time is quite high, ranging from .74 to .94.

These results are consistent with the pattern that has emerged throughout this analysis of minority high school preparation. There is a steady reduction in the percent of minority students adequately prepared for college education. Minority students are much less likely to graduate from high school than white students. As they progress through elementary and secondary school minority students are more likely than white students to be one or more grades behind. Therefore, of those that graduate, many do so later than whites. In high school, minority students are more likely than whites to take a program that is not directed at future college going. Finally, based upon our analyses of the class of 1982, minority students are also less likely than white students to take the courses that best indicate future college attendance.

However, some preliminary findings of a Department of Education study which is still underway offer some hope that this pattern is moderating. A partial analysis of recent high school transcripts indicates that Black and Hispanic students in the class of 1987 have increased the rates at which they take the courses our analysis has shown to be indicative of future college attendance. (These courses included at least two courses among algebra 1, geometry, algebra 2, trigonometry or some advanced courses. Generally, geometry is the second "college preparatory" mathematics course taken.) Among the Black and Hispanic students in the class of 1987, taking geometry increased 52.9 and 71.2 percent, respectively above the rate in the class of 1982. The rate of taking other higher level mathematics courses among those students also increased significantly, in several cases by over 100 percent.

If the level of the association (approximately 71 percent) we have identified between taking certain mathematics courses and college attendance holds up, increases in college enrollment among minorities can be expected in the near future. Already, there are widespread accounts in the media of an upsurge in minority college applicants for 1988 admission.

This section has reviewed indicators of minority in-school experience. The next section investigates measures of the effects of these experiences on minority student achievement.

High School Achievement

A student's achievement level may be viewed as an indicator of the student's preparation for college. This section reviews data from two testing programs, the National Assessment of Educational Progress and the Scholastic Aptitude Test, in order to compare minority students' scores to white students' scores. Substantial differences in scores clearly may be related to minority students attending college less frequently than whites.

Reading Achievement

The National Assessment of Educational Progress (NAEP), which was authorized by Congress in 1969, assesses the knowledge and educational achievement of the nation's youth in different subject areas. During the past 19 years, NAEP has been the only regularly conducted, nationally representative assessment of educational progress at the elementary, middle, and high school levels. Different subject areas have been included in NAEP's testing program, which was conducted annually from 1969-70 through 1979-80 and biennially thereafter. The achievement of students 9 years old, 13 years old, and 17 years old has been assessed in reading, writing, mathematics, science, social studies, art, and music.

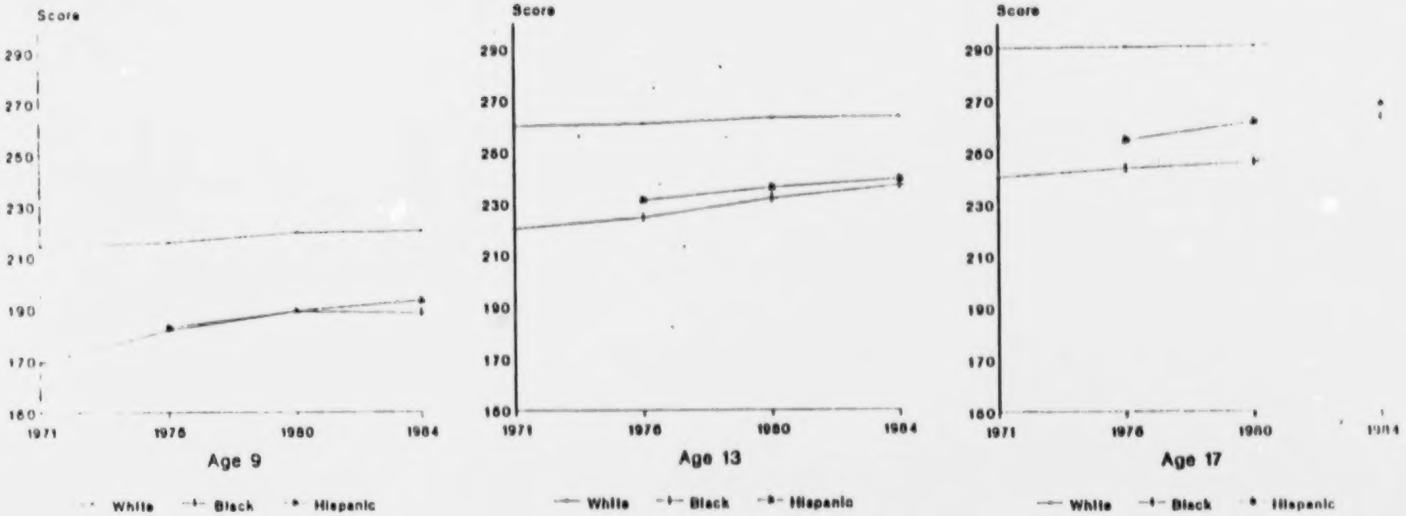
Data from the NAEP assessment of reading achievement may be analyzed to describe further the preparation of minority students for enrollment in college. Results from the NAEP assessments of reading achievement in 1969-71, 1974-75, 1979-80, and 1983-84 can be used to compare the achievement of white, Black, and Hispanic students. Figure 3.2 contains the average reading achievement of white, Black, and Hispanic students ages 9, 13, and 17 years from 1971 to 1984. Data contained in the figure indicate that:

- The average reading scores of Black and Hispanic students have increased since 1971 for all three age groups;
- The gap between scores of white students and those of minority students has been reduced somewhat; and
- The average reading score of minority students is still substantially below the average reading score for white students. The average scores of Black and Hispanic 17 year olds are, for the most part, below those of white 13 year olds.

Beginning with the 1983-84 reading assessment, a reading proficiency scale with five levels of proficiency was introduced to enhance the interpretability of students' scores. The five proficiency levels are briefly described in Figure 3.3. Figures 3.4 and 3.5 display the percentage of Black and Hispanic students age 17 years by reading proficiency level for 1971, 1975, 1980, and 1984. (Of the three NAEP age groups, 17 year olds are the most relevant for investigating preparation for college.)

By 1984 over 65 percent of Black and Hispanic students were at or above the intermediate level, a substantial increase over the 1971 or 1975 percentages, especially for Black students (41 percent in 1971 and 45 percent in 1975). While the percentage of Blacks at the "adept" level

Figure 3.2
Average Scores for NAEP Reading Assessments by Age and Race/Ethnicity: 1971, 1975, 1980 and 1984



*Hispanics included in "white" in 1971

From U.S. Department of Education, National Center for Education Statistics Condition of Education, 1986.

Source Educational Testing Service, The Reading Report Card, 1985.

FIGURE 3.3

NAEP LEVELS OF READING PROFICIENCY

RUDIMENTARY (150)

Readers who have acquired rudimentary reading skills and strategies can follow brief written directions. They can also select words, phrases, or sentences to describe a simple picture and can interpret simple written clues to identify a common object. Performance at this level suggests the ability to carry out simple, discrete reading tasks.

BASIC (200)

Readers who have learned basic comprehension skills and strategies can locate and identify facts from simple informational paragraphs, stories, and news articles. In addition, they can combine ideas and make inferences based on short, uncomplicated passages. Performance at this level suggests the ability to understand specific or sequentially related information.

INTERMEDIATE (250)

Readers with the ability to use intermediate skills and strategies can search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and reach generalizations about main ideas and author's purpose from passages dealing with literature, science, and social studies. Performance at this level suggests the ability to search for specific information, interrelate ideas, and make generalizations.

ADEPT (300)

Readers with adept reading comprehension skills and strategies can understand complicated literary and informational passages, including material about topics they study at school. They can also analyze and integrate less familiar material and provide reactions to and explanations of the text as a whole. Performance at this level suggests the ability to find, understand, summarize, and explain relatively complicated information.

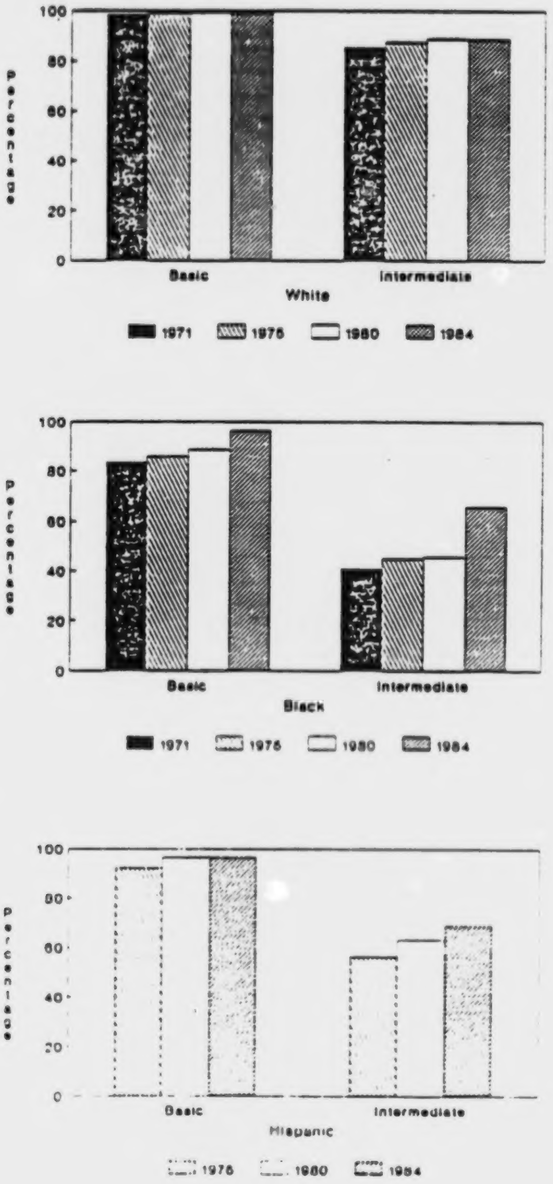
ADVANCED (350)

Readers who use advanced reading skills and strategies can extend and restructure the ideas presented in specialized and complex texts. Examples include scientific materials, literary essays, historical documents, and materials similar to those found in professional and technical working environments. They are also able to understand the links between ideas even when those links are not explicitly stated and to make appropriate generalizations even when the texts lack clear introductions or explanations. Performance at this level suggests the ability to synthesize and learn from specialized reading materials.

SOURCE: The Reading Report Card, Educational Testing Service, 1985.

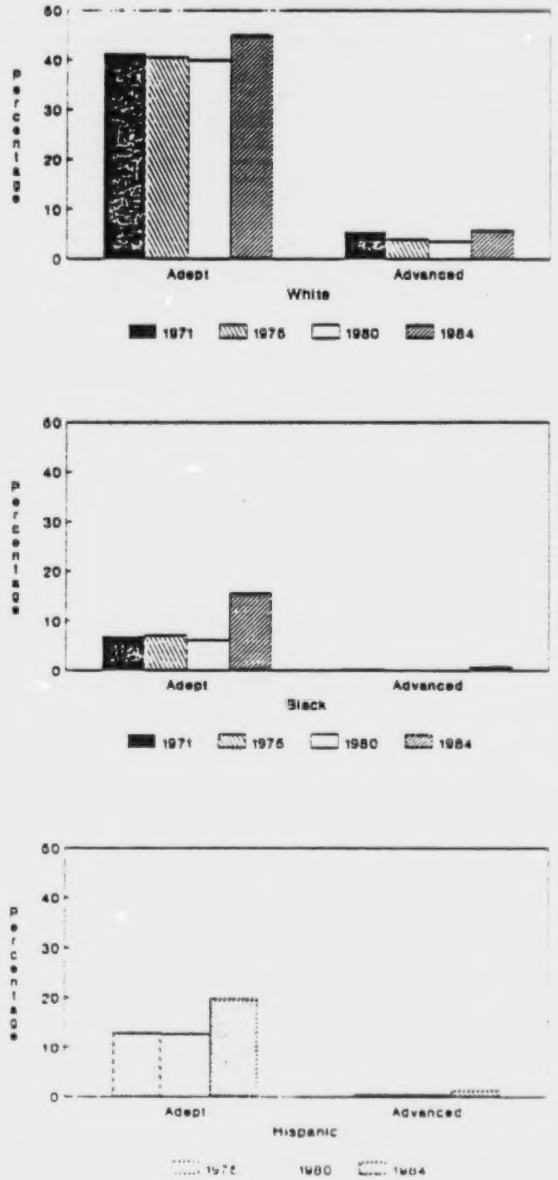
Figure 3.4

Percent of 17-Year-Olds Attaining NAEP Reading Proficiency Levels of Basic and Intermediate by Race/Ethnicity: 1971, 1975, 1980 and 1984



Source Educational Testing Service. The Reading Report Card. 1986

Figure 3.5
Percent of 17-Year-Olds Attaining NAEP Reading Proficiency Levels of Adept and Advanced by Race/Ethnicity: 1971, 1975, 1980 and 1984



Source: Educational Testing Service. *The Reading Report Card*, 1985 more than doubled from 1971 to 1984, still only 16 percent of Black 17 year olds were at this level compared to 45 percent of white 17 year olds (The Reading Report Card, 1985). The percentage of Hispanics at the adept level increased from 13 percent in 1975 to 20 percent in 1984. The percent of minority students at the adept level is more important when viewed in conjunction with the results of recent analyses that show that the average reading score of persons 21 to 25 years old who have some postsecondary education is 320 and of those who have a college degree is 343 (Condition of Education, 1987). Since few 17 year old minority students are at these levels, it may be concluded that, in terms of reading achievement, only a small percentage of minority students are adequately prepared in elementary and secondary school for college.

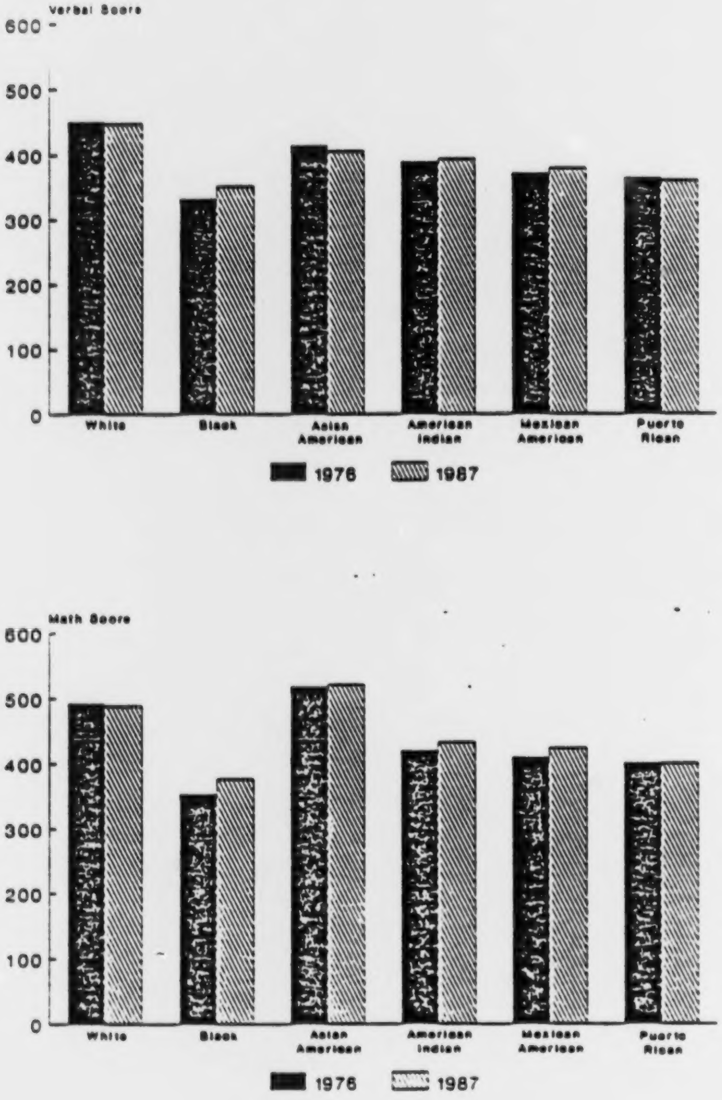
Scholastic Aptitude Test

The Scholastic Aptitude Test (SAT) is part of the College Board's Admissions Testing Program (ATP). Colleges use data from the ATP, including SAT scores, to assist them in recruiting and selecting students. The College Board uses the term "college-bound seniors" to denote the cohort of students from each graduating class that participates in the ATP. However, the college-bound seniors do not include all high school graduates nor all seniors who will enroll in college. Thus SAT data only partially represent high school graduates.

College-bound seniors' average SAT scores for 1976 through 1987, by ethnic group, are included in Figure 3.6. Average verbal scores increased for most minority groups, including Blacks, Mexican Americans, and American Indians, but decreased for others including Asian Americans and Puerto Ricans. Since white students' scores decreased, the gap between white and minority students' SAT verbal scores narrowed or

Figure 3.6

Average SAT Scores by Race/Ethnicity: 1976 and 1987



Source: The College Board. National College Bound Seniors, 1987.

remained the same for all groups except American Indians. However, the remaining gap is still substantial, ranging from 42 to 96 points.

Average mathematics scores increased for all minority groups except Puerto Ricans. Mathematics scores of whites decreased, so the gap between white and minority SAT mathematics scores narrowed (except for Asian Americans whose mathematics average score exceeds the white average score). However, as with verbal scores, the gap is still large, ranging from 57 to 112 points.

Not only are minority average SAT scores below white average scores, but the percentage of minority students obtaining high scores is also substantially below the percentage of white students with high scores. Table 3.6 displays the percent of each group of interest scoring 500 and above on the verbal portion of the SAT and 550 and above on the mathematics portion of the SAT, in 1985. The percentage of Black students at these levels is only about 25 percent of the white percentage. While other minority percentage differences are not quite as great, only Asian Americans attain relatively as many high scores as whites.

Access Factors: Segregation and Student Financial Assistance

Segregation and the availability of student financial assistance are two factors associated with minority access to higher education which have changed considerably over the past 25 or so years, in large measure because of the involvement of the Federal government. Through the use of its tremendous authority, influence, and fiscal resources, the Federal government has been a positive force in promoting minority access to higher education. This section reviews the changes in these factors over the past twenty to thirty years and what their current effects might be.

Table 3.6

PERCENT OF STUDENTS SCORING 500 AND OVER ON SAT VERBAL AND 550 AND OVER ON SAT MATHEMATICS BY RACE/ETHNICITY: 1985

	Verbal Scores	Mathematics Scores
White	31.4	32.7
Black	7.9	6.5
Mexican American	14.0	15.1
Asian American	25.0	43.6

Note: A verbal score of 500 represents the 74th percentile and above of the test-taking population. A mathematics score of 550 and above represents the 72nd percentile and above of the test-taking population.

Source: Ramist and Arbeiter. Profiles, College-Bound Seniors, 1985 and College Entrance Examination Board. National College-Bound Seniors, 1985.

Desegregation

Over the 34 years since the Brown decision, all three branches of the Federal government have been actively involved in promoting access of minority citizens to institutions of higher education. When the states with segregated systems of education (both elementary/secondary and higher) continued to operate after Brown with few changes in such arrangements, the Congress passed the Civil Rights Act of 1964. Title VI of the Act makes it illegal to discriminate on the basis of race, color or national origin under any program or activity that receives Federal financial assistance. Thus, states with segregated systems of higher education were in jeopardy of losing Federal financial aid for research, program development, and student support if they continued to maintain their de jure segregated systems of higher education.

The executive branch of the Federal government was charged with the enforcement of Title VI and, in 1965, principally through the HEW Office for Civil Rights (OCR), and the Department of Justice (DOJ), began extensive efforts to desegregate southern elementary and secondary schools.

In 1969 OCR notified ten states that their higher education systems were in violation of Title VI (Brown, 1988). These ten states either refused to submit any statewide plans to desegregate, or submitted what were seen by some as ineffective ones. Accordingly, in 1970 the NAACP Legal Defense and Education Fund (LDF), filed a lawsuit against HEW which became known as the Adams case, to force the Federal government to follow the provisions of Title VI and cut off Federal aid to these state systems of higher education.

In 1973, the Federal district court in Washington, D.C., that heard the _Adams_ suit ordered HEW to negotiate acceptable plans with the ten states or to begin enforcement procedures. In 1977, the same court ordered HEW to issue formal guidelines on what would constitute acceptable statewide plans and to renegotiate the plans it had previously accepted. Thereafter, OCR notified eight other states that they had failed to dismantle the vestiges of their formerly _de jure_ segregated systems and, therefore were in violation of Title VI. Four of the states did not submit acceptable desegregation plans to OCR and, after further negotiations failed, OCR referred the four states to DOJ for enforcement action.

OCR has been successful in negotiating desegregation plans for fourteen states. The plans for ten states expired at the end of the 1985-1986 school year.

OCR has assessed the compliance and achievements made by each of the ten states with their desegregation plans. OCR has found that four states have fully complied with their desegregation plans. Six other states, while having been found to have made significant progress were found to have not substantially implemented all of the components of their desegregation plans. OCR has required each of these six states to submit plans specifying how it will implement the outstanding commitments made in their desegregation plans.

In essence, the past twenty years have been a period of previously unprecedented Federal involvement in higher education. As a result, significant advances have been made in desegregating IHEs in both the North and the South. Today, issues of _de jure_ segregation _per se_ no longer appear to be a significant factor in the participation of minorities in higher education. Minority students are enrolled in all types of IHEs in all sections of the country. HBCUs still enroll a significant number of the Black students in the South but two-thirds of Black students in the South are enrolled in non-HBCUs -- and most of these are in public institutions. As the analysis based upon the data in Table 3.1 indicates, Black students of equal academic ability and income go to college as frequently as white students and those at the upper ends of the distribution seem to go to predominantly white IHEs without difficulty in obtaining access.

Another related area of potential concern is the possible increase in incidents of overt racism on college campuses. While there has been increased reporting of such incidents in recent years, there is not yet sufficient evidence to document the frequency of these incidents or to establish that their occurrence is again becoming a factor in inhibiting minority student's participation in higher education. This is an area that requires further research and the establishment of an appropriate data base.

Influence of Student Financial Aid

Since 1965, with the passage of The Higher Education Act (HEA) (which was most recently reauthorized in 1986), the Federal government has been actively promoting equal educational opportunity through the creation of student financial assistance programs designed especially to enhance student access and choice. Title IV of the HEA authorizes six major student aid programs. These include three grant programs: Pell grants, formerly called Basic Educational Opportunity Grants or BEOGs, which provide need-based grants to undergraduate students who are enrolled at least half-time in postsecondary education; Supplemental Educational Opportunity Grants (SEOGs), a need-based grant program for undergraduates administered by campuses; and State Student Incentive Grants (SSIGs), which provide matching funds of up to 50 percent for state-administered need-based grant programs. College work-study (CWS) provides up to half-time employment for students; eligibility for the program is based on need as assessed by institutional student aid officers. There are also two loan programs: the Guaranteed Student Loan Program (GSL) insures and provides interest subsidies for loans by private lenders to students and parents; and the Perkins program, formerly National Direct Student Loan (NDSL) program, which provides direct, low-interest federal loans to students at participating institutions. Repayments on Perkins loans go directly into a loan fund at the institution, which is supplemented each year by new Federal appropriations. The GSL program was expanded in 1980 to include parent loans for undergraduate students (PLUS).

The combination of grants, work-study, and loan programs constitutes a comprehensive Federal program of student assistance that is complemented by other institutional and state programs, private programs, and other Federal assistance programs, including aid for veterans and a series of other grant and loan programs, the largest of which are for the health sciences.

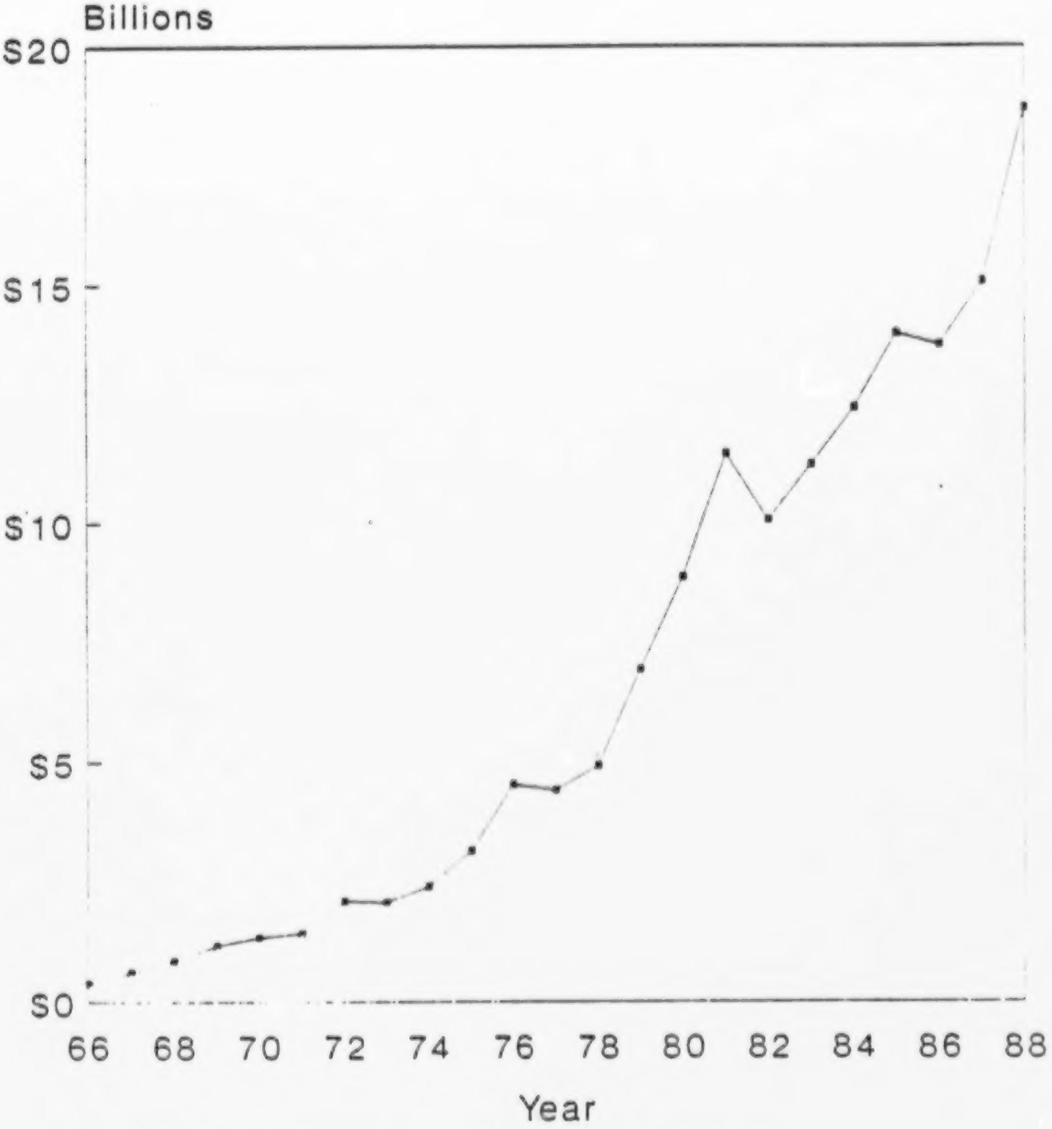
Federal financial assistance available to students was only about $100 million annually prior to the passage of Title IV of the Higher Education Act. In fiscal year (FY) 1966, available assistance increased to almost $400 million and exceeded $1 billion dollars in FY 1969. The rapid increase in available assistance is clear from Figure 3.7, which contains total Federal financial assistance available by year from 1966 through 1988.

During the 1970s, financial assistance to students continued to grow rapidly. Federal aid available to students increased from $1.3 billion in FY 1970 to $8.9 billion in FY 1980. During that period, the Pell grant program was created and grew to nearly $2.4 billion by FY 1980; the GSL program grew from $0.8 billion in FY 1970 to $6.2 billion in FY 1980; and the campus based programs grew from $0.4 billion to $1.9 billion. Most of the expansion in GSL was between FY 1977, when $1.9 billion was awarded in the program and FY 1980. During this period two pieces of legislation were implemented that expanded eligibility to the GSL program--the Middle Income Student Assistance Act of 1978 (MISAA) and the Education Amendments of 1980 (which reauthorized the HEA).

During the 1980s, the available student financial aid increased though not at as great a rate as in the 1970s. The available aid from all Federal programs increased from $11.4 billion in FY 1981 to nearly $18.7 billion in FY 1988. There were also changes in funding priorities. The need-based financial aid programs expanded during the half decade. Pell awards grew from $2.2 billion in FY 1981 to $4.4 billion in FY 1985, a 100 percent increase, while GSL/PLUS grew from $7.4 billion to $9.1 billion, a 23 percent increase.

During the early 1980s, the priority for Federal investment was directed toward two Federally administered programs: Pell and GSL. The expansion in Pell was due primarily to growth in the average award level

Figure 3.7
Total Student Aid Available: 1966-1988
(billions of dollars)



SOURCE. U.S. Department of Education, Office of Planning, Budget and Evaluation.

for Pell recipients. The number of recipients was approximately 2.7 million in FY 1981 and FY 1984, while the average award grew from $881 to $1,105. In contrast, the growth in GSL was due primarily to increases in the number of recipients, which grew from 2.9 million in FY 1981 to 3.5 million in FY 1985, rather than to average award, which increased from $2,135 in FY 1981 to $2,297 in FY 1985 (The College Board, 1987). These changes were intended to concentrate Pell awards, which are direct Federal grants, on the neediest students, and to make GSL/PLUS, which is only partially Federally subsidized, more available to middle income students and families.

Research on effects of student financial aid on access to and persistence in higher education has consistently shown that financial aid has a positive influence on these outcomes, especially for low-income students. In the most recent review of the literature on the effects of student financial aid, Leslie and Brinkman (1988) concluded that:

- All econometric and opinion surveys indicate that student financial aid does increase the enrollment of low-income individuals and that "without aid, mostly in the form of non-repayable grants, the enrollment of low income students would be reduced by about 20 to 40 percent."
- Most studies of participation rates also indicated that a greater proportion of low-income individuals were participating in higher education in the early 1980s than prior to the advent of the Pell Grant program.
- Overall, student financial aid permits aid recipients to progress through college at a similar rate as non-recipients (who presumably do not need financial aid).
- The effects of student aid on persistence differ along several dimensions, the most important being:
  - The size of the effect has grown in recent years;
  - Nonwhite aid recipients do not persist as well as white recipients;

- Persistence is enhanced by larger amounts of aid; and
- When forms of aid are compared, grant and scholarship aid have a more positive effect on persistence than do loans.

Alternatives to Postsecondary Education

In addition to high school preparation, segregation, and availability of financial aid as factors affecting minority students' participation in higher education, some researchers have suggested that alternatives to postsecondary education may hold a greater attraction to minorities than college enrollment. Some of these options may include:

- o Increased attractiveness of military enlistment as an alternative to going to college directly out of high school;
- o Opportunities in the labor market for high school graduates that offer more immediate rewards than going to college; or conversely;
- o Declines in the returns to postsecondary education that render college going less financially rewarding than it has been; and
- o Increased recruitment to proprietary postsecondary programs that emphasize career training.

While there may be other similar explanations hypothesized to explain the gap between white and minority college going behavior, these are the explanations most often cited. Unfortunately, the proper investigation of these possible explanations would require a survey research study that is beyond the scope of the present effort. Further, a search of the literature has failed to turn up any such studies of these phenomena among the attitudes and perceptions of minority youth.

Given these constraints, this study has investigated the data concerning each of the hypothesized factors to determine if there is a basis in reality for the alleged behavior. Failing to find a basis does not rule out the explanation as a factor. However, it would reduce substantially its possibility. Each of the factors identified will be discussed below.

Military Enlistment

One hypothesis that has been proposed is that military enlistment and a military career are more attractive options to minority group members than attending college, particularly for Black students. It has been said that Black participation in the military is increasing and that high school graduates can learn a skill and begin a career more effectively in the military than in college.

The analysis conducted for this report failed to confirm this "conventional wisdom." It seems as though two separate developments that actually occurred in two separate time periods, have been combined to create the hypothesis of military attractiveness. The first development was the increase in the number of Black enlistees in the early 1970s -- the same period in which Black college going rates were also on the increase. The second development was the military requirement of the mid-1980s that all enlistees be high school graduates. These developments were separated by a decade and, from a review of the data on military enlistments, do not explain college participation rates among Black high school graduates.

The percent of Blacks in the military did increase between 1976 and the present. The largest increase occurred between 1976 and 1980 - 306,496 to 399,729 or from 14.8 percent to 19.6 percent of all active duty armed forces personnel (Arbeiter, 1986). However, we are only interested in the numbers of new recruits who would be drawn from the pool of potential college going Blacks and not the percent of armed forces personnel who are Black.

Table 3.7 has been constructed using unpublished data obtained from the Defense Manpower Data Center. This table shows the total number of Non Prior Service (NPS) accessions to the armed services between fiscal year 1972 and fiscal year 1987 for all individuals, for male and female Blacks, and for Black high school graduates. The total accessions, as well as those of Blacks, show a downward trend from the early 1970s, which was the end of the Vietnam era. There is a peaking of the Black accessions in 1979-1980 (and even this would not be a peak period if only Black males were considered).

When the Black accessions with a high school education are considered, 1979-1980 also seems a peak period. The trend from that point through the 1980s is one of stability or slight reductions in terms of total high school graduates entering the military.

It does not appear that military enlistment can be considered as an explanation for either any changes in Black college going behaviors or for any overall Black college going level. They key variable for this analysis is Black military enlistments as a percent of all Black persons 18 to 24 years old who are high school graduates, which has decreased from 1973 to 1987. From these data it is clear that the attractiveness of military enlistment has not increased for Black high school graduates.

To eliminate the gap between college enrollment rates of white and Black 18 to 24 year old high school graduates would require that at least 75 percent of the Blacks who currently enlist in the armed forces attend

TABLE 3.7

TOTAL NON-PRIOR SERVICE (NPS) ACCESSIONS TO U.S. ARMED FORCES AND BLACK ACCESSIONS BY GENDER, AND HIGH SCHOOL GRADUATION STATUS: 1973-1987

		Black						
Fiscal Year	Total NPS Accession	Male	Female	Total	Percent	High School Graduates (incl. GEDs)	% of Total Who Are H.S. Graduates	Total as % of 18-24 year old H.S. Graduates
1987	291,050	48,169	9,914	58,083	20.0	56,902	98.0	N/A
1986	308,571	45,451	9,955	55,406	18.0	58,091	97.8	2.1
1985	292,050	44,485	9,898	54,383	18.6	53,375	98.2	1.9
1984	307,981	47,235	9,120	56,355	18.3	55,320	98.2	2.0
1983	298,957	45,444	8,086	53,530	17.9	52,164	97.5	1.9
1982	297,670	48,248	7,643	55,891	18.8	53,497	95.7	2.0
1981	323,141	50,873	10,019	60,892	18.8	56,873	93.4	2.2
1980	355,497	65,017	13,058	78,075	22.0	61,458	78.7	2.6
1979	310,456	69,395	10,938	80,333	25.9	64,131	79.9	2.7
1978	306,197	62,104	8,046	70,150	22.9	58,238	83.0	2.6
1977	376,465	71,424	4,819	76,243	20.3	56,955	74.7	2.5
1976	393,499	62,813	4,731	67,544	17.2	48,722	72.3	2.3
1975	408,251	67,429	5,849	73,278	18.0	49,504	67.6	2.4
1974	388,711	75,875	5,263	81,138	20.9	49,242	60.7	2.4
1973	439,185	71,152	3,121	74,273	16.9	47,824	64.4	2.4

* 1973-1976 = July to June, 1977-1987 = October to September.
** Of known education levels (may not be of total enlistees).

Source: Defense Manpower Data Center, unpublished data. These numbers may not agree with official service totals.

college instead. Moreover, even if the military's attractiveness to Blacks could be so dramatically reduced, it would take about seven years for Blacks to reach parity with white college enrollment rates, and at that point, the military would become disproportionately white.

Labor Market Options and Returns on Postsecondary Investment

When computing real costs of postsecondary education, researchers routinely include the loss of possible earnings as a cost factor. As a benefit, they calculate the increased earnings that occur as a result of the additional time and resources spent obtaining more education. Likewise, it stands to reason that when young people consider postsecondary enrollment they too often consider the current labor market options. Therefore, it could be that the attractiveness of the labor market for recent minority high school graduates has increased or that the return on the investment in a postsecondary education is diminishing. Analysis of data on these factors does not support these possibilities.

The labor market attractiveness issue turns on two primary factors. The first is the availability of labor market options. The second is the return on those options. Turning to the first involves a review of the labor market conditions for recent high school graduates.

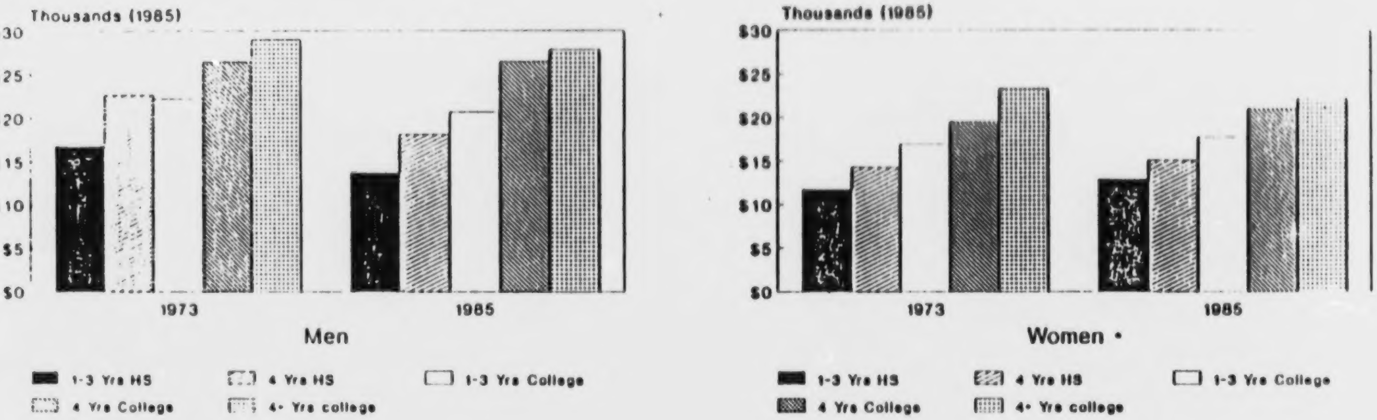
The situation in the youth labor market is a very mixed one. There are many factors that have influenced the labor market for 18-19 year olds during the 1980s: the "baby boom" cohort had just passed through the youth labor market, thus, a decline in supply occurred during these years; the 1982 recession took place; manufacturing, traditionally a big employer of high school educated youth, was in decline; low wage/part-time service industry work opportunity was on an upswing. Given all these factors, it is difficult to generalize about the period other than to recognize that the aggregate effect was that youth unemployment was quite high and, some would argue, would have increased the attractiveness of college participation.

During the recession of the mid-1970s, youth unemployment was 39 percent for Blacks and 18 percent for whites in the 18 to 19 year old cohort. College going was at some of the highest levels recorded. During the 1982 recession, unemployment reached 22 percent among whites and nearly 48 percent among Blacks. It took until 1987 for these rates to decline to the pre-recession rates of about 15 and 35 percent respectively, which for Black youth are still quite high. Nevertheless, even in the face of these high unemployment rates among minority youth, college participation rates have declined from their historically high points in the mid-1970s. Clearly, this decline is not the result of an upsurge in youth employment among minorities.

A related explanation may be that the increased economic returns of a college education over a high school education have declined since the mid-1970s. Again, a review of the data does not bear out this hypothesis. Figure 3.8 displays the mean earnings in inflation-adjusted dollars during 1973 and 1985 for men and women, 25 to 34 years old, who work full-time by level of education. The figure shows that:

- There has been a premium to obtaining a college education since 1973; and
- The premium has increased appreciably for men and somewhat for women since 1973. In 1985 the "college premium" for men is 46 percent and for women, 39 percent.

Figure 3.8
Mean Annual Earnings for Individuals 25-34 Years Old by Gender and Educational Level: 1973 and 1985



• Year Round Full-Time Workers Only

Source U.S. Department of Commerce, Bureau of the Census, Current Population Survey Public Use Tapes, March 1974 and March 1987; Calculations by Center for Labor Market Studies, Northeastern University.

Table 3.8 displays data on earning differentials across the years 1973 to 1986 for younger men only (age 20 to 24 years old) by race/ ethnicity. While there was no college premium for men in this age group in 1973, there is a clear premium in 1986 of about 25 percent. What is even more significant to this discussion is that the real (adjusted for inflation) earnings of all groups shown declined since 1973, except for those of college educated Blacks, who actually increased their earnings by 6.5 percent. Again, it is clear that the data do not support the hypothesis that the returns on an investment in postsecondary education have declined. They have not. They have grown, and appreciably so.

Proprietary Schooling

As indicated in Chapter 1, enrollments in proprietary schools have mushroomed over the past decade. In addition to the Moore (1987) estimates cited previously, which show that enrollments in proprietary schools grew by over 60 percent between 1976 and 1982, another sign of growth in proprietary education is the enormous increase in Federal financial aid within this sector. For example, the rate of participation of proprietary school students in the Pell Grant program has grown threefold in less than fifteen years. In 1974, proprietary students received $3.5 million (7 percent of all Pell Grants awarded). By 1986, proprietary students received $783.5 million (21 percent of all Pell Grants) (Moore, 1987).

A review of the growth in Pell funds from 1980-81 to 1985-86 by the various types of postsecondary institutions in which they are used provides an informative comparison that highlights the relative growth of aid in the proprietary sector. Pell funding rose 51 percent at public

TABLE 3.8

TRENDS IN THE REAL MEAN ANNUAL EARNINGS OF 20-24 YEAR OLD CIVILIAN MALES, BY EDUCATIONAL ATTAINMENT * AND RACE/HISPANIC ORIGIN: 1973 TO 1986 (IN 1985 DOLLARS)

	All Males (20-24)		% Change in Earnings 1973-1986			
	1973	1986	All	White	Black	Hispanic
				(Non-Hispanic)		
All Males	$11,939	$8,859	-25.8	-20.1	-46.1	-29.1
Dropouts	11,595	6,725	-42.1	-42.4	-60.6	-27.3
High School Graduates	14,937	10,720	-28.3	-24.4	-43.8	-34.5
Some College	12,864	10,756	-16.4	-11.4	-42.7	-21.2
College Grads.	14,357	13,502	-6.0	-5.6	+6.5	N/A

* Earnings data pertain only to those 20-24 year old males who did not cite school as their major activity at the time of the March 1974 and March 1987 surveys.

SOURCE: U.S. Department of Commerce, U.S. Bureau of the Census. Current Population Survey Public Use Tapes, March 1974 and March 1987; Calculations by Center for Labor Market Studies, Northeastern University.

two-year institutions; at public four-year institutions, 36 percent; at independent institutions, 14 percent; and at proprietary schools, 192 percent, while total program funds increased 51 percent overall (ACE, 1987). During this same period the number of Pell Grant recipients at all public and independent institutions decreased, while the number of Pell Grant participants attending proprietary schools more than doubled.

If this growth in proprietary school enrollment is occurring among those minorities who are prepared to go to college, then enrollment in postsecondary proprietary vocational training (PPVT) may be a factor in the relatively lower college participation rates among minorities. Proprietary school enrollment is believed to be disproportionately minority in composition. Earlier studies have indicated that the proportion of proprietary school students who are minority is much higher than the proportion of community college students that are minority (Friedlander, 1980). Analyses of the High School and Beyond data which were conducted for this study offer some, albeit not conclusive, confirmation of this belief. Similarly, data from the National Postsecondary Student Aid study also lend confirmation to this belief. Data from that study indicate about 40 percent of students enrolled in for-profit private schools are minority.

Table 3.9 indicates that of the graduates of the class of 1980 who had enrolled in proprietary postsecondary vocational training schools within six years of graduation, 21.6 percent were minority. Of the Class of 1982 who indicated PPVT enrollment within four years of graduation, 30.1 percent were minority. Since the relative proportion of minority students in PPVT is different four years after graduation (class of 1982)

Table 3.9

HIGH SCHOOL GRADUATES ENROLLED IN PROPRIETARY VOCATIONAL TRAINING BY RACE/ETHNICITY

	Class of 1980	Class of 1982
White, non-Hispanic	77.0 %	69.1 %
Black, non-Hispanic	13.6	20.0
Hispanic	5.7	8.4
Asian American	2.3	1.7
American Indian/Alaskan Native	1.4	.8
Total	100.0 %	100.0 %

Source: U.S. Department of Education, National Center for Education Statistics. High School and Beyond Survey: Senior Cohort, Third Follow-up and Sophomore Cohort, Third Follow-up.

and six years after graduation (class of 1980), then either the total number of minority students enrolled in PPVT must be increasing or minority students are more likely to enroll in PPVT sooner after their high school graduation than whites.

Regardless of whether these proportions of minority enrollment among high school graduates become more equivalent over time, it appears that minority PPVT enrollment is at least equivalent to their proportion of the population and may exceed it. In Chapter 2 we reported that 22 percent of the U.S. population age 18 to 24 years old is minority. Minorities constitute about 15 percent of four-year college enrollment and 22 percent of two-year IHE enrollment. The proportion of high school graduates who pursue PPVT enrollment seems to be at least equivalent to the proportion in community college and possibly more.

Table 3.10 contains the percentages of white, Black, and Hispanic high school graduates of the classes of 1980 and 1982 who report any PPVT enrollment within six and four years of high school graduation, respectively. Among the class of 1980 the rates of PPVT enrollment among whites, Blacks, and Hispanics are 5.8, 8.0, and 4.6 percent respectively. Thus, Black students are attending PPVT programs at a somewhat higher rate than white students, who, in turn, attend at slightly higher rate than Hispanic students. Data from the Class of 1982 show the same pattern.

To investigate whether or not these differences in enrollment rates may have affected college enrollment rates of minority students, we analyzed enrollment patterns in PPVTs by race/ethnicity and test performance. For students in the top and bottom halves of an achievement test administered as part of the HS&B study, Table 3.10

Table 3.10

PERCENT OF HIGH SCHOOL GRADUATES IN SELECTED RACIAL/ETHNIC GROUPS THAT HAVE ENROLLED IN PROPRIETARY VOCATIONAL TRAINING

	High School Graduating Class					
	1980			1982		
	% PPVT w/in 6 yrs of graduation			% PPVT w/in 4 yrs of graduati		
	Achievement Test Performance			Achievement Test Performance		
Race/Ethnicity	Total	Top Half	Bottom Half	Total	Top Half	Bottom Half
White, non-Hispanic	5.8	5.1	5.6	4.6	4.5	4.6
Black, non-Hispanic	8.0	5.6	6.4	4.9	5.8	4.5
Hispanic	4.6	6.6	4.0	3.8	3.2	4.2

Source: U.S. Department of Education, National Center for Education Statistics. High School and Beyond Survey: Senior Cohort, Third Follow-up and Sophomore Cohort, Third Follow-up.

contains the percentages who attended PPVT by race/ethnicity for the Classes of 1980 and 1982. (We assume that students in the top half are more likely to attend college than those in the bottom half.) For students in the Class of 1980 from the top half about the same percent of white and Black students (5.1 and 5.6 percent, respectively), attended a PPVT program within six years of graduation. Although the rate is slightly higher for Hispanics (6.6 percent), the difference between the Hispanic and white rates represents a small number of students (about 441). These small differences could not explain any of the variation in college attendance rates among these groups.

For students in the Class of 1982, the percent of Black students who have attended PPVT is slightly higher than the white rate (5.8 and 4.5 percent, respectively). The difference in rates represents about 1,155 Black students. This difference is more substantial than the differences observed in the Class of 1980, but is still not nearly large enough to account for any more than a very small portion of the gap between white and Black college attendance. As in the Class of 1980, Hispanic students attend PPVT programs less frequently than other students.

Thus, although Black students do attend PPVT programs more frequently than whites, the differences in rates of attendance are not large enough to be considered significant in explaining the gap in college enrollment rates between white and minority students.

CHAPTER 4

PROMISING APPROACHES TO PROMOTING MINORITY STUDENT ENROLLMENT AND CONTINUATION IN COLLEGE

Overview

This chapter describes programs that exist to enhance minority student preparation, enrollment, and continuation in college. Three types of approaches are discussed:

- High school and other programs that encourage high school students to continue on to college;
- College remediation and retention programs aimed at keeping minority students enrolled in college; and
- Community college programs that facilitate the transition of minority students to four-year colleges and universities.

Programs that encourage high school students to continue on to college target diverse populations, offer a wide range of services, and are run by several different service providers. The chapter reviews:

- Franklin High School and Garfield High School, both urban high schools in Los Angeles that focus on enhanced academic preparation for college and also offer comprehensive college counseling programs to their students;
- The Prep for Prep program and A Better Chance, which are privately sponsored programs that prepare minority students for placement in selective secondary institutions as the first step to promoting access to high-quality colleges and universities;
- The I Have a Dream programs and the PRIME program, which are examples of effective collaborations between private industry, community-based organizations, Institutions of Higher Education etc., that offer opportunities and incentives to disadvantaged minority students; and

- The Federally funded TRIO programs which include Upward Bound, Talent Search, and the Educational Opportunity Centers, all of which seek to promote access to higher education through a variety of services, including academic instruction, counseling, and information dissemination about postsecondary programs and financial aid options. An additional TRIO program, Student Support Services, aimed at retaining minority students in college once enrolled is also reviewed.

The research on campus-based retention and remediation programs targeted at minority students suggests that successful programs provide comprehensive services and demonstrate an institutional commitment to enhancing the quality of campus life for minority students. The chapter discusses educational strategies that such programs employ, including:

- Institutional support such as early orientation, diagnostic testing, career planning, faculty advising, summer enrichment programs, remedial courses, and tutoring; and
- Personal approaches to improve campus climate such as improved counseling for minorities, efforts to increase minority participation in student activities, and peer group counseling.

The final section of the chapter reviews programs at LaGuardia Community College, Cuyahoga Community College, and Miami-Dade Community College that are illustrative of the activities that two-year colleges have undertaken to improve the transfer of minority students to four-year colleges and universities. These efforts are designed to:

- Provide students with more and better information about transfer opportunities;
- Prepare them more effectively for an upper division college;
- Improve the working relationships between administrators and teachers in two-year and four-year institutions; and
- Formalize transfer arrangements between these institutions.

Introduction

There is a concern that some minority students who are capable of going to college fail to do so because they are unaware of the programs and financial resources available to them. In some cases, these students may even drop out of high school or abandon serious study because of their belief that college is not an option available to them. Other students may make the transition to college but are not adequately prepared academically or are unable to adjust to the new environment. As a result, many of these students terminate their education without completing a degree. Still other students may complete a program at a two-year or community college, but not achieve their objective to make the transition to a four-year college and complete a bachelor's degree.

To address these situations, a variety of strategies and programs have been developed by both secondary and postsecondary institutions and by the Federal government. Some of these programs have been previously evaluated and their success is well-documented. For other programs, we must rely upon only anecdotal reports (when evaluation data are available, they are included in the discussion which follows). Therefore, while this chapter describes programs which appear to offer promise of further promoting access to higher education, the decision to adopt a particular program should be made only after close review of all available data and careful consideration of the particular local situation. In general, there is still a need to study what does work in the various realms described and to determine how to spread those approaches to other locations.

Programs to Encourage High School Students to Enroll in College

There are a number of different types of programs which seek to encourage minority high school students to enter college. They differ along several dimensions. Some programs begin their efforts with students still in elementary or junior high school with the rationale that, by high school, students have often already made decisions, such as those regarding academic program, which limit their future options. Others are directed at high school students. Another basis for distinguishing programs is the academic characteristics of the the target population. Some programs are designed to promote access, often to elite institutions, for very talented minority students who might otherwise not have the appropriate academic preparation or financial resources to enroll in postsecondary education. Other programs, such as those operated by the I Have a Dream Foundation, aim to provide opportunities for postsecondary education to a wide range of disadvantaged students.

Programs With Enhanced Academic Preparation

Minority students from disadvantaged backgrounds who attend inner-city high schools generally have relatively low rates of entry into postsecondary education. Despite this, certain high schools succeed in placing substantial percentages of their minority students in higher education.

Franklin High School in Los Angeles is located in a neighborhood where the average family income is under $12,000 a year. In 1987-88, 92 percent of Franklin's student body was minority; about 73 percent of the student body is Hispanic. Franklin works to provide a high quality education and appropriate college preparation to its students, offering a range of advanced placement courses and stressing faculty stability. The school also runs a multi-faceted program to increase student motivation to pursue higher education.

Franklin's full-time college and financial aid specialist considers junior high school articulation crucial and conducts evening workshops for ninth graders and their parents. These workshops review the requirements for a high school diploma, as well as admissions requirements for community colleges, California state colleges and universities, the University of California system, and independent colleges. Students are strongly encouraged to take courses appropriate for college entry and to provide the grounding for future academic success. Franklin's college counselor stresses the importance of solid high school academic programs and also introduces future opportunities for participation in summer programs. Workshop sessions are translated into several different languages for the non-English-speaking parents. The financial aid system is also discussed in detail. Ninth graders are encouraged to take the PSAT to enhance performance and reduce anxiety on future SAT tests.

A counselor spends two full days with each tenth grade guidance class, focusing on the importance of a college education. Tenth graders are taught how to fill out sample financial aid forms. They are encouraged to bring them home to their parents to alleviate parental fears about college expenses. Franklin involves parents at all stages of the college process, as many of them have not graduated from high school and often do not read or speak English.

The school makes an intensive effort to enroll a sizeable number of juniors in prestigious summer academic programs held on campus, at prep schools, and in colleges. The college counselor acts as an advocate and liaison with admissions and financial aid officers at these programs as virtually all of Franklin's students require scholarship aid to attend the programs. Summer programs that Franklin students have attended and will attend this year include: Phillips Academy, Exeter and Phillips, Andover, Cornell, University of California-Santa Barbara, California State University-Los Angeles, University of Vermont, and Carleton College. Sponsored trips to college campuses are also a vital part of the program, as parents of students at Franklin cannot afford to send their children themselves.

Over the past several years, about 80 percent of Franklin's graduating seniors have gone on to postsecondary education. The percentage of students going on to higher education today is much larger than it was in the 1960s, when the school was predominantly white. Between 1982-88, Franklin graduates have gone on to colleges and universities such as Amherst, Brown, CalTech, Harvard, Stanford, University of Pennsylvania, Wellesley, Williams and Yale.

Garfield High School, which is 98 percent Hispanic and also is located in Los Angeles, stresses a personal approach to student motivation within the context of a college-oriented academic program. Garfield's college counselor believes that student motivation stems from the opportunities offered in Garfield to take high-level courses and from high faculty expectations. Garfield offers Advanced Placement courses in 13 academic areas, and encourages as many students as possible to enroll in these courses. At least 500 students are enrolled in one or more Advanced Placement courses. Students in the gifted program often take several AP classes; those students identified as gifted who are not performing up to their potential take enriched classes, designed to reintegrate them into honors and AP classes. Many other students are referred by teachers or refer themselves to be considered for Advanced Placement coursework. Garfield's success in promoting the entry of minority students into higher education has received popular notice in a recently released film, Stand and Deliver.

School officials estimate that over 70 percent of Garfield's 1986 graduating class pursued postsecondary education. Of all Mexican American students who took a calculus Advanced Placement examination nationally, over 17 percent were from Garfield. Further, the results of this stress on academic rigor is affecting the entire student body. Achievement scores in both reading and math went up significantly from 1983 to 1985.

The school has found that even high-achieving minority students often lack the self-confidence to pursue higher education. Thus, the career counseling staff makes a concerted effort to talk to students individually at each stage of the application process. The office has an open-door policy from seven o'clock in the morning to five o'clock in the afternoon to encourage students to seek academic counseling.

Garfield also uses peer support as part of its personal approach, having students themselves go around to classrooms to encourage other students to complete the necessary steps for college application. The counseling staff works closely with parents who may be reluctant to have their children leave home. The school may set up meetings between parents whose children have gone away to school and those parents who are concerned about it. Garfield also provides students with extensive exposure to college speakers and organizes college tours as well.

Secondary School Placement Programs

The Prep for Prep Program in New York City begins with a rigorous admissions process -- a talent search for academically gifted sixth graders conducted in the city's public schools. While selected students remain in their regular public school classrooms, they participate in a 14-month preparatory program that consists of two summer sessions and the school year between them. Summer sessions are seven weeks; classes meet Monday through Friday from 9:00 a.m. until 3:20 p.m. A recreation hour follows. Students receive several hours of homework each night. The program is departmentalized so that a student has a different teacher for each subject. Class size is normally about 14 students in a teaching section. During the school year (mid-September to early June), classes meet for two hours after school one day a week and all day Saturday at a private school in Manhattan.

During the first summer session and the school year program, most students take five subjects: English (literature and writing skills), American History (including study skills), Research Skills, Laboratory Science, and Mathematics. Many students also study Latin. During the second summer, students follow somewhat varying academic programs, choosing from a greater range of courses. Some students begin French, while others begin or continue Latin. Most students take a psychology and values course to help them better understand their own development and influences upon it. Many students also take a contemporary social issues course. Throughout the program, individual and group counseling sessions are offered. At first, the sessions are geared to help students adjust to the program. Later in the year, they focus more on adjustment to an independent school. There is a continued emphasis on relating one's values to the process of making decisions.

The Prep for Prep Program is now in its tenth year. It operates at a cost of about $6,000 per child and receives 95 percent of its funding from private sources. During the 1987-88 school year, the program enrolled 460 students in independent schools and eight students in specialized high schools. Seventy-five Prep for Prep alumni have already graduated from independent schools and are now enrolled in the nation's leading colleges, including Columbia, Cornell, Harvard, Haverford, Oberlin, Princeton, the University of Pennsylvania, Swarthmore, Wesleyan, Williams, and Yale.

A Better Chance (ABC), established in 1963, is a national organization serving academically talented minority students from all economic backgrounds. Students are recruited and admitted to ABC schools, which include the majority of exceptional boarding and day schools, based on academic merit, personal motivation, and promise. Most applicants are in the top 10 percent of their class, have B average grades, and have good academic and personal recommendations.

Students usually begin the program at the ninth- or tenth-grade level. ABC monitors the social and academic progress of its students throughout high school and provides counseling and support. ABC also runs a College Membership Program, designed to facilitate communication between these schools and ABC juniors and seniors. Most ABC students require substantial financial aid; award amounts are determined by the individual school.

During the past 25 years, about 6,000 students have graduated from ABC member schools and most have entered selective colleges and universities and gone on to demanding graduate schools. ABC has in the past received Federal funding, but in recent years its support has come from individuals, corporations, and foundation grants.

Collaborative Efforts

The I Have a Dream Foundation in New York City began with industrialist Eugene Lang's now-famous promise to a 6th-grade graduating class in Harlem to finance their college educations. Lang realized that the promise of college scholarships was only the first step towards helping these students. He hired a full-time staff member from the school's East Harlem neighborhood. This counselor works with students daily, providing support, intervention, and encouragement in all aspects of their home and school lives.

Lang's plan has now been replicated at numerous schools throughout the city and the nation. Programs require a sponsor who adopts a fifth- or sixth-grade class by donating at least $275,000 and pledging his or her personal time until the students graduate from high school. The sponsor is required to hire a full-time project coordinator to work on a supportive basis with the students and their families. The program is headquartered in a local community-based organization. Programs offer the "Dreamers" (students) a variety of academic, cultural, social, and recreational activities. Each "dream" class is currently involved in after-school tutoring, remediation, and recreation programs, usually conducted by local colleges or universities.

The original Lang I Have a Dream program has had a significant effect on the lives of its participants. Of the original 61 Dreamers from the June 1981 graduating class at P.S. 121, 10 left the program because of family relocation. Of the remaining 51, 30 graduated from high school in June 1987 and all of these graduates are either attending college or will be attending college by January 1988. The remaining 21 students are expected to receive high school diplomas in either January or June 1988 and many are expected to continue on to college. These results are remarkable in an area where it has been estimated that over 60 percent of the students drop out of high school.

The I Have a Dream program has already been replicated by other philanthropists in several other cities, including Washington, D.C. Two states, New York and Connecticut, are also planning to pattern student aid programs on the I Have a Dream model. In New York, the legislature is considering Liberty Scholarships, under which the state would make up the difference between available student aid and the cost of attending state-affiliated colleges or universities. The Connecticut program, Help and Opportunity to Pursue Education (HOPE), is in a preliminary stage, but is similar to the New York plan in that it would guarantee a seventh-grader the cost of attending a state school. It is not yet clear how the "personal time" devoted to the students in the Lang program will be replicated in these programs. Clearly, however, this is a critical component of the Lang model.

The Philadelphia Regional Introduction for Minorities to Engineering (PRIME) program was founded in 1973 to create opportunities for minorities and women in the engineering field; the project expanded its scope in 1984 to include pre-college training in many other mathematics and science-based professions. PRIME offers capable minority students from seventh grade and above specialized and supplementary activities in mathematics, science, and communications. Programs include enrichment, motivation, and skill development activities offered during special PRIME classes for middle and junior high students and after-school sessions for senior high students focusing on college and career planning. Intensive summer programs are available to the most talented PRIME students at Philadelphia area colleges and universities. In addition, PRIME maintains relationships with area businesses and government agencies, each of which are linked with a PRIME school to promote relationships between the students and companies through field trips, classroom presentations and other activities.

Since its founding in 1973, PRIME has served between 30,000 and 50,000 students. At least 80 percent of the students in each program year have graduated from a four-year college. In 1987, PRIME graduated 159 seniors from area high schools; 152 of them, or 96 percent, are currently matriculating at colleges and universities around the country.

Federally Funded Programs

The TRIO programs are a collection of special programs for students from disadvantaged backgrounds.* Several of these programs specifically promote access to postsecondary education.

Upward Bound provides services to low-income and potential first-generation college students between the ages of 13 and 19, and to veterans preparing themselves for postsecondary education. Participants are chosen based upon counselor, teacher, and social service agency recommendations. Programs can be sponsored by IHEs, public and private non-profit agencies, and (in exceptional cases) secondary schools.

The program offers remedial academic instruction and tutoring, special curricula, counseling, information on postsecondary educational opportunities, financial aid, and career options, assistance with all stages of the college application process, and exposure to cultural events. Services are designed to increase the skills and motivation needed for successful pursuit of postsecondary education.

Upward Bound students usually participate in an intensive six- to eight-week summer program held on a college or university campus. Students continue to receive services during the school year, often after school and on weekends. Information and assistance regarding the postsecondary application process is an important part of services for high school juniors and seniors.

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* The name TRIO dates back to the late 1960s when the first three programs were established. Upward Bound, the oldest of the programs, was created by the 1964 Economic Opportunity Act. Talent Search was established by the Higher Education Act of 1965, and the Higher Education Amendments of 1968 added Special Services for Disadvantaged Students. The Higher Education Act Amendments of 1972 added a fourth program -- Educational Opportunity Centers -- but the TRIO label has never been disassociated from the Special Programs. The fifth program is Training Program for Staff and Leadership Personnel; it was established by the Education Amendments of 1976. In this section, we discuss two of the original three programs--Upward Bound and Talent Search, as well as the Educational Opportunity Centers. The next section discusses the third original TRIO program, Special Services for Disadvantaged Students, now known as Student Support Services.

Several studies over the years have indicated that Upward Bound's participants enter postsecondary education at higher rates than comparable non-participants. In 1972, Research Triangle Institute (RTI) began a longitudinal evaluation of Upward Bound which included two follow-up surveys of participants, one in 1975 and the other in 1978. RTI's study included the following data on Upward Bound outcomes:

- Educational aspirations and expectations - On the average, 80 percent of Upward Bound participants aspired to a four-year college degree or higher, as compared with 65 percent of non-participants. Over 70 percent of Upward Bound participants expected to achieve these goals, versus 50 percent of non-participants. These positive effects increased with length of program participation.
- Postsecondary application and entry rates - About 85 percent of Upward Bound participants applied to and entered postsecondary education, versus about 70 percent of non-participants, with larger differences for rates at four-year colleges and universities.

The RTI study also reported that Upward Bound participants entered institutions that generally offered higher degrees and were more selective than institutions attended by nonparticipants. Upward Bound participants also earned significantly more college credits than comparable nonparticipants during their first three semesters. Unfortunately, 21 months after high school graduation, college retention rates among Upward Bound participants were no longer significantly greater than among comparable nonparticipants in Upward Bound.

Jung (1984) used High School and Beyond data to compare Upward Bound participants with a similar group of non-participants. His findings were consistent with the findings on college entrance previously reported. Results showed that over three-quarters of Upward Bound participants reported applying to a college or university while in high school.

compared with 59 percent of non-participants. Sixteen months after high school graduation, 51 percent of Upward Bound participants reported they were attending a college or university, compared with 39 percent of non-participants. However, by 21 months after high school completion the retention rates were no longer significantly greater than for comparable non-participants.

In addition, almost 85 percent of Upward Bound college applicants studied were accepted into their first- or second-choice schools. As Jung writes, "This is definitely a group for which the predicted proportion of college application/entry would be below the norm; instead, it is nearly 20 percentage points above!" (Jung, 1984, p. 13). Jung goes on to conclude that "for those youths who complete the Upward Bound experience, the payoff in terms of increased opportunity is real" (Jung, 1984, p. 17).

In 1986, 403 Upward Bound projects served a total of 30,500 participants, at an average cost per student of $2,378. Total 1986 program funding was $72,527,000.

Talent Search encourages disadvantaged young people ages 12 to 27 to graduate from secondary schools and to enroll in postsecondary education. Two-thirds of the participants in Talent Search programs must be low-income persons who would be first-generation college students. The program also encourages high school dropouts to return to school. The same institutions that can sponsor Upward Bound programs are also eligible for Talent Search programs.

Talent Search projects generally try to use a long-term, developmental approach, designed to compensate for a student's lack of school and community support. Projects work with students on academic preparation and motivation, starting early in high school. For instance, freshmen and sophomores might attend small-group workshops on decision-making skills, introductions to college programs, and ways to choose appropriate academic programs for their goals. Later in high school, students receive direct help with the postsecondary application process. Projects also usually maintain relationships with admissions and financial aid offices, and provide counseling and follow-up on students' application and enrollment status (Franklin, 1985).

Nationally aggregated evaluation data are not available on the impact of the Talent Search program. There are, however, examples of projects that appear to be effective. A 1985 College Board study of 11 of the 167 Talent Search Projects found all 11 projects to be providing a coherent collection of services, exceeding the legislative requirements, to a diverse range of disadvantaged clients in an extremely cost-effective manner. Examples of effective projects include:

- Florida A & M University - Most participants are Black high school students from rural areas and small towns around Tallahassee, recruited because they lack home or school encouragement to pursue postsecondary education. Students receive services throughout high school and until they enroll at an appropriate postsecondary institution. In 1981-82, nearly 80 percent of the project's high school seniors entered postsecondary institutions -- almost double the rate for all seniors in the high schools where the project is operating.

- Project STAY, San Antonio, Texas - This project targets Hispanic high school seniors, but also recruits recent high school graduates and postsecondary dropouts. The project provides college guidance services to counteract the lack of such services at high schools in the project area. In 1982, Project STAY placed 75 percent of its high school seniors in postsecondary education.

The 175 Talent Search projects served 195,988 participants in 1986. The average cost per participant was $100, for a total program budget of $19,607,000.

The Educational Opportunity Centers (EOCs) provide services to adults who wish to begin or re-enter postsecondary education. The centers focus on two areas--career counseling, and information and assistance about postsecondary program options, individual institutions, and admissions and financial aid procedures. Clients are provided with: personal counseling; assistance with child care, transportation, and other problems; and assistance in entering or re-entering postsecondary institutions. EOCs work to inform the entire community through a variety of efforts, including mass media campaigns and college and job fairs.

A College Board study (1985) found those EOCs examined to be successful in serving large numbers of clients, providing, and often exceeding, legislatively required services. Two successful EOCs studied in greater detail include:

- Washington, D.C. EOC - This EOC reached the community through activities like College Day, which in 1982 brought representatives of 100 institutions to meet with 4,000 visitors; a quarterly newsletter distributed to over 10,000 residents; and a radio program on student financial aid broadcast throughout the metropolitan area. In 1982, 75 percent of the center's clients with high school diplomas were either enrolled in postsecondary education, or had been admitted and were awaiting enrollment in the fall term.
- Massachusetts EOC - Five individual centers make up the statewide program. A follow-up study of a sample of EOC clients served in 1979-80 demonstrated that 93 percent of those planning to enroll in college had actually enrolled. Full-time employment among all clients had increased from 18 to 45 percent.

A total of $8,810,000 was awarded to 37 Educational Opportunity Centers in program years 1986-87. The Centers served 106,250 people at an average cost per participant of $83.

Remediation and Retention Programs

The issue of minority representation in higher education concerns not only the enrollment of minority students, but their persistence to degree attainment. Estimates of attrition rates for the general postsecondary population vary greatly, from about 10 to 40 percent of all entering students, and research indicates that these rates are significantly higher for minority students (Clewell and Ficklen, 1986).

While there is extensive literature on factors which contribute to college student attrition and on programs designed to enhance retention, the literature on minority student retention is far more limited. This section characterizes the different approaches used to retain and remediate minority college students at intervals in their academic careers and identifies promising programs illustrative of these strategies.

Promising Strategies

The research literature on minority student retention efforts focuses on institutional efforts and consistently identifies certain components essential to successful programs. In their study, Improving Minority Retention in Higher Education: A Search for Effective Institutional Practices, Clewell and Ficklen (1986) examined minority retention programs at four diverse institutions, concluding that despite institutional variations, the following elements contribute to program success: an articulated policy on minority retention; commitment from administration and faculty; program institutionalization; comprehensive services; committed staff; efficient data collection; and "non-stigmatization of participants" (p. 46). Christoffel concurs with these findings when she writes that a "multi-faceted and campus-wide approach to minority student access and retention is the most likely way to help minority students succeed in college" (Christoffel, 1986, p. 2).

A report by the National Advisory Committee on Black Higher Education and Black Colleges and Universities (1980) attributes high attrition rates for Black students to poor campus climate, including Black perception of a hostile environment; perceived stigmas attached to special financial or academic assistance; lack of support systems for racial, cultural and academic problems; and lack of support from white, and sometimes Black, faculty and administrators. In addition, recent and widely publicized racist incidents on some campuses contribute to a growing national concern with issues of "campus climate."

Research and current events both indicate that programs which are confined to an individual campus office or which function without support from the institutional infrastructure appear far less likely to be successful than those which provide a wide range of services and which demonstrate a sincere commitment to the quality of minority student life.

In her report Minority Student Access and Retention: A Review, Christoffel (1986) provides a useful classification of minority retention efforts. She designates three types of retention strategies as: educational, financial, and personal, then displays the ways that these approaches can be implemented at various "intervention levels" of a student's educational development. These levels are: high school, prefreshman, freshman, sophomore/transfer and senior/graduate. We will focus our discussion only on educational and personal strategies at the prefreshman and freshman levels, since issues related to financial aid and intervention at the high school and sophomore transfer levels are discussed in other sections of this chapter.

Educational Strategies

At the prefreshman level, Christoffel identifies several educational strategies that would improve retention and remediate skill deficiencies. These include: early orientation efforts; diagnostic testing of student skills and preparation; minority student needs assessments; career and future personal planning programs; introduction to faculty advising; summer academic enrichment programs for underprepared students; and faculty and staff sensitivity training. California State University-Fresno runs an Educational Enhancement Program which addresses the last of these objectives. The program sponsors workshops, faculty-student mentor programs, and other activities designed to enhance faculty awareness of the needs of minority and non-traditional students.

Christoffel lists educational strategies for freshmen as: expanded and improved orientation; career counseling programs tied to academic advising; intensive, intrusive academic advising by faculty; improved basic skills and academic remediation courses; peer tutoring and other support programs; increased number of minority faculty and staff; and institutional and student evaluation of retention efforts.

The Student Retention Project at the University of North Carolina-Greensboro, is an example of an educational support program for freshmen designed to improve graduation rates. The program, begun in 1984, coordinated by an admissions office staff member in conjunction with the advising office, identifies Black and white freshmen who are potentially at high risk due to academic difficulties, and assigns faculty advisors to these students. Students meet with their advisors before registration, at midterm, and during spring semester registration. Advisors receive reports of students not making satisfactory academic progress, so they can provide these students with immediate intervention counseling and assistance. The project also holds workshops on study skills like time management, reading, test-taking, and note-taking. While it is too early to assess the program's impact on student graduation rates, students indicate that they find advisors to be particularly helpful in course selection and in directing academic goals. Project staff ultimately hope to make this support program available to all students.

Personal Strategies

For prefreshmen students, Christoffel writes that institutions can provide improved counseling focused on minority concerns. For freshmen, better minority participation in student activities and peer group counseling are possible types of personally oriented retention strategies. By offering a more supportive and empathetic environment through peer group counseling and by increasing minority involvement in campus life, institutions can try to improve the frequently cited problems of "campus climate."

Model Programs

Retention programs for minority students can be distinguished on the basis of the target population. Some programs target regularly admitted students; others focus on specially admitted students. Programs with each emphasis are discussed below. Several of the model program descriptions are drawn from Clewell and Ficklen (1986).

Programs for Regularly Admitted Students

California State-Fresno has developed a wide range of recruitment and retention efforts directed at regularly admissible minority students. The College Student Outreach Retention and Enhancement-Student Affirmative Action Program (CORE-SAA) provides peer counseling by graduate students to freshmen, transfers and students on probation. The University also runs a number of other special programs for minority students such as the College Assistance Migrants Program, the Health Careers Opportunity Program, and the Minority Engineering Program. Again, underlining the importance of comprehensive services, Clewell and Ficklen write that, "the fact that these services are visible, varied, and effective seems to confirm the fact that these programs are a legitimate part of the university" (Clewell and Ficklen, 1986, p. 27).

The Federally funded TRIO programs also include a retention program called the Student Support Services program. This program provides support services to students already enrolled at institutions of higher education, and to those accepted for enrollment. Participants must be either low-income, first-generation college students, or physically handicapped and may have been either regularly or specially admitted.* Programs must be sponsored by institutions of higher education. While projects vary considerably in the mix and extent of services offered, most provide a combination of the following services: instruction in all fundamental academic subjects; tutoring; academic, personal, and financial counseling; exposure to cultural events; assistance in applying for student financial aid; information on further educational opportunities; and assistance in applying for admission and financial support for enrollment in graduate and professional programs.

The System Development Corporation examined 58 SSDS projects in 1978-79 to determine the program's impact on students during their freshman year; a follow-up study was conducted in 1982-83 to assess the program's impact on student persistence.** The average SSDS project studied services provided during the summer as well as during the school year. The average participant was found to receive services 14 times per academic year. About 75 percent of students received orientation and/or cultural-relations services, while two-thirds of students received counseling and about half the students received tutoring as a significant component of their project participation.

The inital study showed that students receiving a full range of SSDS services are more than twice as likely to persist through their freshman year than are students receiving few or no services. Additionally, students receiving more SSDS services are more likely to attempt and complete more course units. The follow-up study showed that almost 60 percent of the sample were still enrolled three years after their freshman year. While moderate levels of academic services were correlated with positive results more than no services or intensive academic services (possibly those receiving intensive services were most educationally deficient), all levels of non-academic services, such as orientation and cultural services, were positively associated with time enrolled, courses attempted and completed, and grade-point average.

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* An example of the Student Support Services program operates at the University of North Carolina-Greensboro. The program serves only specially admitted students, and thus is discussed in the next section.

** At the time that the study was done, the program was still called Special Services for Disadvantaged Students (SSDS).

In 1986, Student Support Services programs operated at 660 institutions of higher education and served 154,000 participants. Average cost per participant was $434, for a total program funding level of $66,881,000.

Programs for Specially Admitted Students

Boston College's Options Through Education (OTE) program is an example of a comprehensive retention program, combining educational, financial and personal strategies which are provided to students at all stages of their academic experience, from the prefreshman summer to senior year. OTE students are minority students identified in the admissions process as having potential to succeed at Boston College but who do not meet regular admissions standards. Forty to 50 OTE students in each entering class are provided with full funding for all four years of college. Prior to matriculation, OTE students participate in a six-week summer program, taking four hours of English and mathematics instruction each day, along with supplementary courses in subjects such as biology, intercultural awareness and human sexuality. Students placed in upper level English and mathematics courses may receive credit, allowing them to have lighter freshman year courseloads. OTE students continue to meet monthly with advisors and receive monitoring and advising throughout their years at Boston College.

Tutorial services are available to students from the Office of African American, Hispanic, Asian and Native American (AHANA) Student Programs; students may also take free summer courses to remediate any academic deficiencies. In addition to the OTE program, the AHANA office serves as a resource to all minority students on campus. What is notable about OTE, however, is that it admits students to a selective institution who would not ordinarily be admitted to a selective institution, and then provides them with the resources to succeed in college. According to Clewell and Ficklen (1986), the overall retention rate for OTE students is 81.2 percent.

The Federally funded Student Support Services program operates at the University of North Carolina-Greensboro, providing services to eligible students who are specially admitted. Approximately 120 students join the program each year, of whom about 80 avail themselves of the special services. (About 80 percent of the students in the program are Black.) Eligibility criteria stipulate that students must be first-generation college students, economically and educationally disadvantaged, and/or physically handicapped. Program services include academic advising; individualized instruction in mathematics, reading, writing and study skills; tutoring and counseling. Reading and writing assessments are administered to students prior to course registration to develop a plan of study for students.

The program appears to be working quite effectively in retaining students from their first to their second year of college. Specially admitted students entering the university in 1983 as freshmen who received program services had over twice the retention rate of eligible students who did not participate in the program.

California State University-Fresno (and most of the other California State campuses, usually since 1970) runs the state-funded Educational Opportunities Program (EOP), which provides academic support and personal and career counseling to disadvantaged minority students throughout their college years. EOP students are specially admitted, and participants must come from low-income households, have parents who hold less than a bachelor's degree, and must meet certain minimum standards of high school grades and courses. Test scores, motivation and potential are also considered when determining student eligibility. Selected students attend a pre-registration orientation and a three-week residential summer program. After matriculation, students meet weekly with their EOP advisors and have access to tutoring and counseling services. EOP students eligible for financial aid may also receive EOP grants of up to $1,000 per year.

Since the EOP started officially in 1967, its impact has been significant. In 1965 there were less than 200 minority students on campus. It was not until the EOP was established that minority students began to enroll. Currently, one-third of the Black and Chicano students on campus are EOP students. A third of the students who apply to EOP are admissible through regular admissions, but they see the program as a vehicle for doing well in college and wish to take advantage of the services it offers. With 1,050 students out of a total enrollment of about 16,000, EOP has one-sixteenth of all students as well as an even larger proportion of the minority enrollment (Clewell and Ficklen, 1986).

Programs to Encourage the Transition From Two-Year to Four-Year Colleges

For many minority students, two-year community colleges serve as the first point of entry into higher education. These institutions offer courses for students seeking entry into the job market and the technology-based professions, basic literacy instruction, and courses for those who are interested in transferring into four-year colleges and universities. When the colleges were developed between 1910 and 1960, the success of two-year colleges in transferring students to higher education was not in doubt. But, as preparation for immediate employment became a major function of these institutions between 1940 and 1970, and as the academic ability of students entering the two-year colleges declined, successful transfer from two-year to four-year institutions became the exception rather than the rule, particularly for urban, minority students (Center for the Study of Community Colleges, 1985).

This lack of success in transferring minority students to four-year institutions is evident in enrollments in postsecondary institutions: Minorities are overrepresented in two-year colleges in comparison with their enrollment in other sectors of higher education. In 1986, minority students constituted about 22 percent of the enrollments at two-year institutions, but only about 15 percent of the enrollment at four-year universities (see Table A-6).

Factors Associated with Community College Transfer

A variety of factors appear to be associated with the underrepresentation of minority youth at four-year institutions of higher education. From the perspective of four-year institutions, many of the problems in transferring are associated with the lower levels of preparation and skill that minorities from urban community colleges bring to the university, particularly in writing and mathematics (Richardson and Bender, 1987). Faculty in these institutions also appear less optimistic about their ability to work effectively with underprepared students than their community college counterparts (Richardson and Bender, 1987). From the perspective of the community college, the policies and practices of the universities inhibit the transfer of students across institutions. These practices include the lack of communication with community college staff who counsel students about course requirements and changes in these requirements, the lack of transfer for credit of community college courses, space, and the failure of four-year institutions to provide the support services that many students transferring from community colleges need to ease their entry into and ensure their success in the senior institution (Donovan, Schaier-Peleg, and Forer, 1987).

Concern with minority underrepresentation at four-year colleges and universities has, however, stimulated research into practices that might enhance the transfer of students between institutions as well as the development of programs that incorporate effective transfer practices. A survey of students attending community colleges generated the following recommendations for action at both levels of the system. Among the recommendations for community colleges were:

- Better Information - Counselors at community colleges need better information on which courses transfer to the university. They need to talk with university counselors or work with universities to help the selection of transferable courses;

- Access to Requirements - Students need to have at their disposal easy access to university requirements, transfer procedures, and a list of the courses the university will accept or reject; and

- Orientation - Students need an orientation at the community college that explains the financial resources available and the courses that should be taken to prepare for the university (Richardson and Bender, 1987).

Recommendations for the four-year colleges include:

- Orientation - Transfer students need orientation and tours of the facility, just as entering freshmen do, to explain better what is expected of them at the university;

- Flexible Programming - A great number of working adults who return to school find that the university's undergraduate degree programs are geared to the full-time day student. Transfer students need more programs offered in the evenings and weekends to adapt to their work and family commitments; and

- Transferable Course Credits - Even when courses are accepted for transfer, there are differences in the credit value of courses between the community college and four-year college. These differences should be reconciled so that transfer students do not have to take extra courses to fulfill the college's distribution requirements (Richardson and Bender, 1987).

Other studies of the relationships between two-year and four-year colleges have developed a set of recommendations to enhance productive collaboration and the prospects for improved transfer of minority students (Donovan, Schaier-Peleg, and Forer, 1987). Some of these reflect the views expressed above by students; others go beyond them. Their recommendations for improved collaboration include:

- Key administrators and faculty from two- and four-year colleges should meet periodically to discuss curriculum, teaching strategies, and outcomes;

- Articulation agreements should be developed by both faculty and administrators at participating institutions and should be communicated to all faculty, students, and counselors. The articulation agreements should clearly specify course requirements and policies for transfer of credits from the two-year to the four-year college;
- Two-year and four-year colleges should encourage state and local coordinating and governing boards to adopt policies that guarantee places in four-year colleges for two-year graduates;
- Community colleges should communicate relevant data to four-year receiver colleges so that they may identify and recruit students, particularly minorities, eligible for transfer;
- Community college catalogs should identify transfer courses;
- Two- and four-year colleges should exchange faculty and staff, particularly in transfer-related courses. Through this exchange, community college students would become better prepared for coursework in senior colleges and senior college faculty could learn to work more effectively with students who are not as well prepared academically; and
- Students should be encouraged to take lower division courses at four-year colleges while enrolled in a two-year college. By co-registering for a class at a four-year college, students would have the practical opportunity to test the waters at a senior college prior to transferring.

Some critics of the problem feel that in addition to these primarily information-oriented approaches, community colleges must do more to overcome the poor high school preparation many students receive. According to Mingle, "some states, e.g., Florida and Tennessee, are concluding that nothing short of a full year of "college prep" in community college will solve the problem." (Personal Communication, 1988)

In summary, a variety of approaches have been recommended to improve the possibility of transfer of minority students from two-year to four-year colleges. Some involve better access to information about course requirements and transfer policies for students; others involve greater collaboration between administrators and staff at two-year and four-year colleges; still others involve formal articulation agreements between two-year and four-year colleges that guarantee the transfer of courses or places for community college students at four-year colleges. Others are looking to remediation as the key. We turn now to examples of programs that have put some of these recommendations into practice and which may serve as models for other programs to enhance the transfer of minority students to four-year institutions.

Promising Transition Programs

In recent years, a number of colleges have begun to develop programs to improve the transition from two-year to four-year institutions. Some of the better-known programs that appear to offer potential for success were undertaken with support from the Ford Foundation under a program known as The Urban Community College Transfer Opportunity Program (UCCTOP). UCCTOP was launched in 1983 specifically to advance transfer in urban, public, comprehensive community colleges and to develop strategies to strengthen transfer education. The UCCTOP-funded programs presented in this section reflect a variety of approaches that have been used to improve the transfer rates of minority students.

LaGuardia Community College, Long Island City, New York

The transfer program at LaGuardia Community College provides a staged series of academic, career and personal-development activities for students at each phase of their life at the college. Several features of the overall program are specifically directed at the potential transfer student. (The discussion of LaGuardia's program that follows is drawn from an evaluation prepared by Steven Zwerling at New York University in June 1987.)

Recruitment, Dual Admissions, Talent Search - LaGuardia Community College has established dual admissions arrangements with Queens College and Baruch College, two of the senior colleges in the City University of New York. Through the dual admissions, the college is working to have students begin to think about transferring to a four-year college even before they begin classes at LaGuardia. Although other colleges also have dual admissions agreements, LaGuardia's is particularly ambitious. Its goal is to have 80 percent of its students take up the offer of dual admissions by transferring to a four-year college.

In addition to dual admissions, LaGuardia has developed an activity called Talent Search, whose purpose is to discover students who are "potential achievers" and provide them with the support they need to navigate the environment of four-year schools and to apply for appropriate scholarships. LaGuardia also organizes activities with and at four-year colleges for Talent Search students so that they can become familiar with the receiver colleges and their faculties.

Data Base: Degree Requirements Checklist - To facilitate the transfer of students to four-year colleges, LaGuardia has developed a student information system that includes a Degree Requirements Checklist to compliment the student's transcript. This checklist pulls data from the transcript and placement test results and displays it on computer in a format that allows academic advisors, counselors, and students to see at a glance how students are proceeding towards their academic goals. The college is now working towards the development of software that will enable individual students to match their records at LaGuardia against the transfer requirements at four-year colleges with which LaGuardia has articulation agreements and give them an early indication of how their credits will transfer at various colleges.

Transfer Counseling and Resources - Until the software to match students with the requirements of articulation agreements is developed, the college will continue to use a print version of this material, which currently takes the form of a Transfer Information Guide. The Guide is designed to enable the student to select the best combination of courses for transfer purposes. It also provides information for faculty about the relative value of their courses at four-year colleges.

Career and Transfer Resources Center - The Career and Transfer Resources Center (CTRC) is a physical setting where transfer information is available. The CTRC stocks transfer applications and includes a computerized guidance system, college catalogs, and information about specialized scholarships. The Center also sponsors Transfer Fairs, Scholarship Workshops that emphasize the scholarships available at private colleges, and Transfer Workshops, designed to match a student's needs to a senior college.

Academic Activities - In addition to the Transfer Workshops sponsored by the CTRC, LaGuardia has attempted to integrate career development, personal assessment, and educational planning into the regular curriculum. This is reflected in Co-op experiences that begin during early quarters and continue through a series of seminars in later quarters. Within the last two years, a Career Development Module was incorporated into the Freshmen Seminar. The Module encourages students to evaluate their educational and career choices, including the possibility of continuing their education and completing a bachelor's degree.

Articulation Agreements - LaGuardia has developed articulation agreements with four-year colleges that are designed to broaden students' options, to provide targets of aspiration, as well as to ensure the transfer of LaGuardia credits (the usual focus of articulation agreements). The Vassar Summer Institute is one of the first examples of this arrangement. However, collaborative ventures now include a number of other institutions, including Clark College in Atlanta, Adelphi University, Long Island University, New York University, and St. John's University.

Senior College Support Programs - To address some of the financial problems associated with transfer to a four-year college, LaGuardia has worked out arrangements with a number of schools to provide support for senior college programs. Long Island Univeristy, for example, offers LaGuardia graduates the opportunity to begin work towards LIU baccalaureates at LaGuardia at a 30 percent discount in tuition. This credit bridge out to four-year college gives students a chance to test their academic skills in the familiar environment of LaGuardia. An arrangement with Middlebury College reserves four places for qualified LaGuardia students and acceptance of up to 64 credits of transfer, as well as peer-support and special counseling for students after they enroll.

There is accumulating evidence that the program implemented at LaGuardia is beginning to have an effect on the transfer rate to four-year colleges. Compared with a graduation rate of 17 percent for Fall 1982 entrants, the graduation rate for Blacks from Fall 1983 rose to 22 percent. Also, the transfer rate for all students has increased markedly since the program has been in effect, from one in six immediately after graduation in 1983-84 to about 50 percent in 1985-86 (Zwerling, 1987).

Cuyahoga Community College - Metropolitan Campus, Cleveland, Ohio

Cuyahoga Community College's Urban Community Transfer Opportunity Program (TOP) is designed to address two major problems in the transfer of minority students from two-year to four-year colleges. First, is the transfer problem itself, i.e., the low rate of transfer of its students to baccalaureate-granting instutitions. Second, is the absence of data and information about those students who do transfer and those who express the interest in transferring, but do not. The most significant features of the college's program are: building curricular linkages to receiving baccalaureate institutions for the purpose of assuring maximum transferability of coursework; building counseling and financial-aid linkages between Cuyahoga and the four-year colleges; and formalizing articulation agreements with baccalaurate institutions, especially historically Black colleges, as a means of minimizing the "transfer shock" of minority students. Some of the main features of Cuyahoga's program are discussed below. They are drawn from a report prepared by the Transfer Opportunity Program in a January 1988 report to the Ford Foundation.

Center for Articulation and Transfer Activities - Cuyahoga Community College established in 1984 the Center for Articulation and Transfer

Opportunities (CATO) to provide greater cohesiveness to its articulation efforts. Its organizational strategy and programmatic activities include improvements in articulation and transfer; curriculum and career program activities; counseling and advising; support systems; evaluation, research, and information; and a computer-based student information and tracking system.

Transfer and Articulation Activities - Cuyahoga has undertaken several activities focused on transfer and articulation. These include: 1) the development of course equivalencies and preparation of transfer guides to four-year institutions; 2) the revision and refinement of a student guide, "How Courses Transfer: An Informational Guide for the Prospective Student;" 3) the development of a computerized information system for rapid updates of course equivalancies; and 4) the statewide computerization of course equivalencies.

Counseling, Advising and Assessment Activities - One of the key components of the transfer program is the provision of special counseling services to students. During each quarter of the 1985, 1986, and 1987 academic years, the college delivered special workshops for those desiring to transfer to a senior institution. These included workshops on "Career Decision Making" and "How to Survive the College Transfer Process." The Career Decision Making workshops were designed to assist students who were undecided about a career with information to develop an understanding of the factors that should be considered when choosing a career. The workshops on "How to Survive the College Transfer Process" were designed to provide students with information about programs and services available through the counseling department to assist in the transfer process. These services included: transfer guides; college catalogs; the Ohio Career Information System; visits to four-year campuses; on-campus visits by admissions representatives; and the college information request service.

Student Tracking - To help students select courses that will meet entrance and bachelor's degree requirements at four-year colleges, Cuyahoga developed the Transfer Request Information Tracking System and the College NOW Program Student Tracking System. A student requests information about a specific senior college or university by filling out a form and returning it to the Counseling Department. The form is then mailed by the counseling department to the college or university, and the information that is returned is entered into a personal computer. The counselors can then use this information to work more closely with other students to assist in the transfer process. Counseling activities include the early identification of transferees and the development of individual education plans for those students who are ready to identify a career goal.

Miami-Dade Community College - North Campus, Miami, Florida

Miami-Dade Community College's Transfer Opportunity Program (TOP) has as its goals: 1) the development of a successful transition model for minority students to Florida's "upper division" colleges; 2) the improvement of students' success in transferring to upper division institutions; and 3) the improvement of the retention rate of Miami-Dade students who transfer to upper division institutions. Towards these goals, the program has developed several key program components. (Our discussion of these components draws largely on the program's annual report prepared for the Ford Foundation late in 1986.)

Seminars on Tips and Strategies for Successful Transfer - The college has found that many of the students it graduates who transfer to upper division colleges often face problems that hinder their persistence in these institutions. To help students still at the college prepare themselves for these situations, the TOP at Miami-Dade holds seminars for students which emphasize tips for successful transfer to the upper division colleges. The seminars, which include representatives from the state universities, emphasize the importance of contacting the institution early to find out about its admissions process, knowing deadlines for submission of applications, financial aid forms, and other information, consulting with counselors and advisors, and seeking out student organizations for support.

To further prepare students for transfer, other seminars are conducted by university admissions and counseling staff on general issues of transfer, as well as transfer into departments with specialized programs. Miami-Dade also offers a one-credit transition course as a part of an on-going Career Center curriculum which helps students clarify their career goals and improve their decision-making skills. A third support activity of this type is the College Survival Course, which provides students specific information and support in transferring to an upper division institution.

Preparation for the College Level Academic Skills Test (CLAST) - The range of state legislative mandates designed to improve academic standards and accountability -- the College Prep and CLAST, for example -- impact so directly on the rate and viability of minority transfer to four-year colleges and universities that Miami Dade's TOP has concentrated on a variety of academic supports to help potential transfer students improve their academic performance. One activity provides Black students with personalized support in preparation for the CLAST through the Pratt Project. The support includes telephoning each Black student who has been identified as being eligible to take the CLAST, mailing personalized letters to these students' homes, distributing CLAST-related information to students at popular locations on campus, and talking with Black students at places where students frequently congregate and in classroom settings. In addition, the Career Development Module at Miami-Dade was modified to include information about the preparation for the tests, and a student survey was conducted to determine the problems students were having in preparation for the CLAST.

Articulation Agreements - As with several other institutions, articulation agreements with four-year colleges is one of the major components of Miami-Dade's program to improve the transfer of minority students. Over the last two years, the college has expanded its articulation agreements with local and state universities/colleges, including Barry University, St. Thomas, Florida Memorial College, and the University of Miami. The college also began participating in 1987 in the Transfer Articulation Program of the United Negro College Fund, a Ford Foundation-sponsored project which involves 16 private Black colleges and 10 community colleges across the nation.

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APPENDIX A

TABLES

Table A.1

High School Graduation and College Enrollment of White Persons 18 to 24 Years Old by Sex:
1964 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1988	Both	21,261	17,491	82.3%	6,659	31.3%	38.1%
	Male	10,380	8,268	79.7	3,260	31.4	39.4
	Female	10,881	9,223	84.8	3,399	31.2	36.9
1987	Both	21,493	17,689	82.3	6,483	30.2	36.6
	Male	10,549	8,498	80.6	3,289	31.2	38.7
	Female	10,944	9,189	84.0	3,192	29.2	34.7
1986	Both	22,020	18,291	83.1	6,307	28.6	34.5
	Male	10,814	8,780	81.2	3,168	29.3	36.1
	Female	11,205	9,509	84.9	3,139	28.0	33.0
1985	Both	22,632	18,916	83.6	6,500	28.7	34.4
	Male	11,108	9,077	81.7	3,254	29.3	35.8
	Female	11,524	9,840	85.4	3,247	28.2	33.0
1984	Both	23,347	19,373	83.0	6,526	28.0	33.7
	Male	11,521	9,347	81.1	3,406	29.6	36.4
	Female	11,826	10,026	84.8	3,120	26.4	31.1
1983	Both	23,899	19,643	82.2	6,463	27.0	32.9
	Male	11,787	9,411	79.8	3,335	28.3	35.4
	Female	12,112	10,233	84.5	3,129	25.8	30.6
1982	Both	24,206	19,944	82.4	6,694	27.7	33.6
	Male	11,874	9,611	80.9	3,308	27.9	34.4
	Female	12,332	10,333	83.8	3,285	26.6	31.8
1981	Both	24,486	20,123	82.2	6,549	26.7	32.5
	Male	12,040	9,619	79.9	3,340	27.7	34.7
	Female	12,446	10,504	84.4	3,208	25.8	30.5
1980	Both*	24,482	20,214	82.6	6,423	26.2	31.8
	Male	12,040	9,619	79.9	3,340	27.7	34.7
	Female	12,446	10,504	84.4	3,208	25.8	30.5
1979	Both	23,895	19,616	82.1	6,120	25.6	31.2
	Male	11,719	9,457	80.7	3,104	26.5	32.8
	Female	12,174	10,157	83.4	3,015	24.8	29.7
1978	Both	23,650	19,526	82.6	6,077	25.7	31.1
	Male	11,572	9,438	81.6	3,195	27.6	33.9
	Female	12,078	10,088	83.5	2,882	23.9	28.6
1977	Both	23,430	19,291	82.3	6,209	26.5	32.2
	Male	11,445	9,263	80.9	3,286	28.7	35.5
	Female	11,985	10,029	83.7	2,923	24.4	29.1
1976	Both	23,119	19,045	82.4	6,276	27.1	33.0
	Male	11,279	9,186	81.4	3,250	28.8	35.4
	Female	11,840	9,860	83.3	3,026	25.6	30.7

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*1980 Census-based.

Table A.1 (Continued)

High School Graduation and College Enrollment of White Persons 18 to 24 Years Old by Sex: 1964 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1975	Both	22,703	18,583	81.9%	6,116	26.9%	32.9%
	Male	11,050	9,139	82.7	3,326	30.1	36.4
	Female	11,653	9,743	83.6	2,790	23.9	28.6
1974	Both	22,141	18,316	82.7	5,589	25.2	30.5
	Male	10,722	8,768	81.8	3,035	28.3	34.6
	Female	11,419	9,551	83.6	2,555	22.4	26.8
1973	Both	21,766	18,023	82.8	5,438	25.0	30.2
	Male	10,511	8,637	82.2	3,032	28.8	35.1
	Female	11,255	9,387	83.4	2,406	21.4	25.6
1972	Both	21,315	17,410	81.7	5,624	26.4	32.3
	Male	10,212	8,278	81.1	3,195	31.3	38.6
	Female	11,103	9,132	82.2	2,428	21.9	26.6
1971	Both	20,533	16,593	80.8	5,594	27.2	33.7
	Male	9,653	7,807	80.9	3,284	34.0	42.1
	Female	10,880	8,887	81.7	2,310	21.2	26.0
1970	Both	19,608	15,960	81.4	5,305	27.1	33.2
	Male	9,053	7,324	80.9	3,096	34.2	42.3
	Female	10,555	8,634	81.8	2,209	20.9	25.6
1969	Both	18,606	15,031	80.8	5,347	28.7	35.6
	Male	8,420	6,740	80.0	3,146	37.4	46.7
	Female	10,186	8,291	81.4	2,200	21.6	26.5
1968	Both	17,951	14,127	78.7	4,929	27.5	34.9
	Male	8,084	6,221	77.0	2,949	36.5	47.4
	Female	9,866	7,906	80.1	1,980	20.1	25.0
1967	Both	17,500	13,657	78.0	4,708	26.9	34.5
	Male	7,864	6,073	77.2	2,761	35.1	45.5
	Female	9,637	7,586	78.7	1,949	20.2	25.7
1966	Both	17,125	N/A	N/A	4,606	26.9	N/A
	Male	7,807	N/A	N/A	2,822	36.1	N/A
	Female	9,318	N/A	N/A	1,784	19.1	N/A
1965	Both	16,505	N/A	N/A	4,213	25.5	N/A
	Male	7,641	N/A	N/A	2,593	33.9	N/A
	Female	8,864	N/A	N/A	1,620	18.3	N/A
1964	Both	15,308	N/A	N/A	3,369	22.0	N/A
	Male	7,053	N/A	N/A	2,049	29.1	N/A
	Female	8,255	N/A	N/A	1,320	16.0	N/A

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (Various Years)."

Table A.2

High School Graduation and College Enrollment of Black Persons 18 to 24 Years Old by Sex: October 1964 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1988	Both	3,568	2,680	75.1%	752	21.1%	28.1%
	Male	1,653	1,189	71.9	297	18.0	25.0
	Female	1,915	1,492	77.9	455	23.8	30.5
1987	Both	3,603	2,739	76.0	823	22.8	30.0
	Male	1,666	1,188	71.3	377	22.6	31.7
	Female	1,937	1,550	80.0	445	23.0	28.7
1986	Both	3,653	2,795	76.5	812	22.2	29.1
	Male	1,687	1,220	72.3	349	20.7	28.6
	Female	1,966	1,574	80.1	462	23.5	29.4
1985	Both	3,716	2,810	75.6	734	19.8	26.1
	Male	1,720	1,244	72.3	345	20.1	27.7
	Female	1,996	1,565	78.4	389	19.5	24.9
1984	Both	3,862	2,885	74.7	786	20.4	27.2
	Male	1,811	1,272	70.2	367	20.3	28.9
	Female	2,052	1,613	78.6	419	20.4	26.0
1983	Both	3,865	2,740	70.9	741	19.2	27.0
	Male	1,807	1,202	66.5	331	18.3	27.5
	Female	2,058	1,538	74.7	411	20.0	26.7
1982	Both	3,872	2,744	70.9	767	19.8	28.0
	Male	1,786	1,171	65.6	331	18.5	28.3
	Female	2,086	1,572	75.4	436	20.9	27.7
1981	Both	3,778	2,678	70.9	750	19.9	28.0
	Male	1,730	1,154	66.7	325	18.8	28.2
	Female	2,049	1,526	74.5	424	20.7	27.8
1980	Both*	3,721	2,592	69.7	715	19.2	27.6
	Male	1,600	1,055	65.9	278	17.4	26.4
	Female	1,955	1,425	72.9	410	21.0	28.8
1979	Both	3,510	2,356	67.1	696	19.8	29.5
	Male	1,577	973	61.7	304	19.3	31.2
	Female	1,934	1,383	71.5	392	20.3	28.3
1978	Both	3,452	2,340	67.8	694	20.1	29.7
	Male	1,554	956	61.5	305	19.6	31.9
	Female	1,897	1,384	73.0	390	20.6	28.2
1977	Both	3,387	2,286	67.5	721	21.3	31.5
	Male	1,528	970	63.5	309	20.2	31.9
	Female	1,859	1,317	70.8	413	22.2	31.4
1976	Both	3,315	2,239	67.5	749	22.6	33.5
	Male	1,503	936	62.3	331	22.0	35.4
	Female	1,813	1,302	71.8	417	23.0	32.0
1975	Both	3,213	2,081	64.8	665	20.7	32.0
	Male	1,451	897	61.8	294	20.3	32.8
	Female	1,761	1,182	67.1	372	21.1	31.5

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*1980 Census-based.

Table A.2 (Continued)

High School Graduation and College Enrollment of Black Persons 18 to 24 Years Old by Sex:
October 1964 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1974	Both	3,105	2,083	67.1%	555	17.9%	26.6%
	Male	1,396	919	65.8	280	20.1	30.5
	Female	1,709	1,167	68.3	277	16.2	23.7
1973	Both	3,114	2,079	66.8	498	16.0	24.0
	Male	1,434	952	66.4	266	18.5	27.9
	Female	1,681	1,125	66.9	231	13.7	20.5
1972	Both	2,986	1,992	66.7	540	18.1	27.1
	Male	1,373	870	63.4	287	20.9	33.0
	Female	1,613	1,123	69.6	253	15.7	22.5
1971	Both	2,866	1,789	62.4	522	18.2	29.2
	Male	1,318	769	58.3	262	19.9	34.1
	Female	1,547	1,019	65.9	259	16.7	25.4
1970	Both	2,692	1,602	59.5	416	15.5	26.0
	Male	1,220	668	54.8	192	15.7	28.7
	Female	1,471	1,035	70.4	225	15.3	21.7
1969	Both	2,542	1,497	58.9	407	16.0	27.2
	Male	1,141	631	55.3	202	17.7	32.0
	Female	1,402	867	61.8	206	14.7	23.8
1968	Both	2,421	1,399	57.8	352	14.5	25.2
	Male	1,087	582	53.5	170	15.6	29.2
	Female	1,334	819	61.4	183	13.7	22.3
1967	Both	2,283	1,276	55.9	297	13.0	23.3
	Male	1,032	525	50.9	167	16.2	31.8
	Female	1,249	751	60.1	130	10.4	17.3
1966	Both	2,214	N/A	N/A	224	10.1	N/A
	Male	1,005	N/A	N/A	119	11.8	N/A
	Female	1,209	N/A	N/A	105	8.7	N/A
1965	Both	2,041	N/A	N/A	210	10.3	N/A
	Male	935	N/A	N/A	99	10.6	N/A
	Female	1,106	N/A	N/A	111	10.0	N/A
1964	Both	1,930	N/A	N/A	157	8.1	N/A
	Male	903	N/A	N/A	71	7.9	N/A
	Female	1,027	N/A	N/A	86	8.4	N/A

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollmen
--Social and Economic Characteristics of Students: October (Various Years)."

Table A.3

High School Graduation and College Enrollment of Hispanic Persons 18 to 24 Years Old by Sex: October 1972 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1988	Both	2,642	1,458	55.2%	450	17.0%	30.9%
	Male	1,375	724	52.7	228	16.6	31.5
	Female	1,267	736	58.1	224	17.7	30.4
1987	Both	2,592	1,597	61.6	455	17.6	28.5
	Male	1,337	795	59.5	247	18.5	31.1
	Female	1,256	801	63.8	208	16.6	26.0
1986	Both	2,514	1,507	59.9	458	18.2	30.4
	Male	1,339	769	57.4	233	17.4	30.3
	Female	1,175	739	62.9	226	19.2	30.6
1985	Both	2,221	1,396	62.9	375	16.9	26.9
	Male	1,132	659	58.2	168	14.8	25.5
	Female	1,091	734	67.3	205	18.8	27.9
1984	Both	2,018	1,212	60.1	362	17.9	29.9
	Male	956	549	57.4	154	16.1	28.1
	Female	1,061	661	62.3	207	19.5	31.3
1983	Both	2,025	1,110	54.8	349	17.2	31.4
	Male	968	476	49.2	152	15.7	31.9
	Female	1,057	634	60.0	198	18.7	31.2
1982	Both	2,001	1,153	57.6	337	16.8	29.2
	Male	944	519	55.0	141	14.9	27.2
	Female	1,056	634	60.0	196	18.6	30.9
1981	Both	2,052	1,144	55.8	342	16.7	29.9
	Male	988	498	50.4	164	16.6	32.9
	Female	1,064	646	60.7	178	16.7	27.6
1980	Both[*]	2,033	1,099	54.1	327	16.1	29.8
	Male	988	498	50.4	164	16.6	32.9
	Female	1,064	646	60.7	178	16.7	27.6
1979	Both	1,754	968	55.2	292	16.6	30.2
	Male	837	454	54.2	153	18.3	33.7
	Female	917	516	56.3	140	15.3	27.1
1978	Both	1,672	935	55.9	234	14.0	25.0
	Male	781	420	53.8	126	16.1	30.0
	Female	891	516	57.9	128	14.4	24.8
1977	Both	1,609	880	54.7	277	17.2	31.5
	Male	754	396	52.5	139	18.4	35.1
	Female	855	483	56.5	139	16.3	28.8
1976	Both	1,551	862	55.6	309	19.9	35.8
	Male	701	378	53.9	150	21.4	39.7
	Female	850	483	56.8	160	18.8	33.1

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[*] 1980 Census-based.

Table A.3 (Continued)

High School Graduation and College Enrollment of Hispanic Persons 18 to 24 Years Old by Sex:
October 1972 to 1988
(in thousands)

	Sex	All 18-24 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
1975	Both	1,446	832	57.5%	295	20.4%	35.5%
	Male	678	383	56.5	145	21.4	37.9
	Female	769	449	58.4	150	19.5	33.4
1974	Both	1,506	842	55.9	272	18.1	32.3
	Male	720	390	54.2	141	19.6	36.2
	Female	786	129			16.4	
1973	Both	1,285	709	55.2	206	16.0	29.1
	Male	625	348	55.7	105	16.8	30.2
	Female	658	362	55.0	102	15.5	28.2
1972	Both	1,338	694	51.9	179	13.4	25.8
	Male	609	301	49.4	92	15.1	30.6
	Female	728	394	54.1	88	12.1	22.3

Data are not available before 1972.

Note: Hispanic persons may be of any race.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (Various Years)."

Table A.4

High School Graduation and College Enrollment of Persons 18 to 21 Years Old by Race/Ethnicity: October 1967 to 1988

Year	All 18-21 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
White						
1988	11,720	9,312	79.5%	4,909	41.9%	52.7%
1987	11,708	9,394	80.2	4,818	41.2	51.3
1986	11,915	9,625	80.8	4,510	37.9	46.9
1985	12,349	10,045	81.3	4,796	38.8	47.7
1984	12,750	10,245	80.4	4,747	37.2	46.3
1983	13,190	10,513	79.7	4,758	36.1	45.3
1982	13,521	10,761	79.6	4,897	36.2	45.5
1981	13,871	11,061	79.7	4,878	35.2	44.1
1980*	13,826	11,098	80.3	4,709	34.1	42.4
1979	13,899	11,071	79.7	4,577	32.9	41.3
1978	13,856	11,143	80.4	4,546	32.8	40.8
1977	13,781	11,033	80.1	4,678	33.9	42.4
1976	13,642	10,878	79.7	4,685	34.3	43.1
1975	13,448	10,814	80.4	4,655	34.6	43.0
1974	13,157	10,599	80.6	4,248	32.3	40.1
1973	12,702	10,273	80.9	4,146	32.6	40.4
1972	12,454	9,988	80.2	4,328	34.8	43.3
1971	11,769	9,418	80.0	4,243	36.1	45.1
1970	11,293	9,046	80.1	4,045	35.8	44.7
1969	10,930	8,724	79.8	4,139	37.9	47.4
1968	11,002	8,626	78.4	3,975	36.1	46.1
1967	10,614	8,209	77.3	3,793	35.7	46.2
Black						
1988	2,041	1,419	69.5	554	27.1	39.0
1987	2,049	1,473	71.9	605	29.5	41.1
1986	2,092	1,506	72.0	545	26.1	36.2
1985	2,149	1,535	71.4	533	24.8	34.7
1984	2,207	1,581	71.6	539	24.4	34.1
1983	2,236	1,520	68.0	500	22.4	32.9
1982	2,252	1,480	65.7	516	22.9	34.9
1981	2,225	1,489	66.9	538	24.2	36.1
1980*	2,115	1,401	66.2	508	24.0	36.3
1979	2,092	1,319	63.0	503	24.0	38.1
1978	2,083	1,326	63.7	508	24.4	38.3
1977	2,076	1,312	63.2	531	25.6	40.5
1976	2,067	1,324	64.1	554	26.8	41.8
1975	1,957	1,207	61.7	497	25.4	41.2
1974	1,896	1,200	63.3	423	22.3	35.3
1973	1,852	1,147	61.9	358	19.3	31.2
1972	1,805	1,141	63.2	397	22.0	34.8
1971	1,711	1,013	59.2	403	23.6	39.8
1970	1,642	959	58.4	343	20.9	35.8
1969	1,562	887	56.8	342	21.9	38.6
1968	1,527	880	57.6	294	19.3	33.4
1967	1,429	794	55.6	246	17.2	31.0

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*1980 Census-based.

Table A.4 (Continued)

High School Graduation and College Enrollment of Persons 18 to 21 Years Old by Race/Ethnicity: October 1967 to 1988

Year	All 18-21 Year Olds	Number of High School Graduates	Percent High School Graduates	Number Enrolled in College	Percent Enrolled in College	Percent of High School Graduates Enrolled in College
Hispanic						
1988	1,481	794	53.6%	313	21.1%	39.4%
1987	1,371	817	59.6	307	22.4	37.6
1986	1,374	810	59.0	305	22.2	37.7
1985	1,144	688	60.1	255	22.3	37.1
1984	1,088	652	59.9	269	24.7	41.3
1983	1,187	644	54.3	258	21.7	40.1
1982	1,120	628	56.1	247	22.1	39.3
1981	1,253	689	55.0	252	20.1	36.6
1980[*]	1,167	591	50.6	231	19.8	39.1
1979	1,011	560	55.4	219	21.7	39.1
1978	960	517	53.9	177	18.4	34.2
1977	981	544	55.5	218	22.2	40.1
1976	965	502	52.0	226	23.4	45.0
1975	899	514	57.2	219	24.4	42.6
1974	894	503	56.3	208	23.3	41.4
1973	738	377	51.1	151	20.5	40.1
1972	791	404	51.1	130	16.4	32.2

Data are not available before 1972.

Note: Data are not available before 1967 for this age group (18 to 21 years old).

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (various years)."

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[*] 1980 Census-based.

TABLE A.5

Total Enrollment in IHEs by Sex and Race/Ethnicity: Biennially, Fall, 1976 to 1986 (in thousands)

Race/Ethnicity of Student	1976	1978	1980	1982	1984	1986	1976-86 (Percent Increase)
White, non-Hispanic	9,076	9,194	9,833	9,997	9,815	9,914	9
Male	4,814	4,613	4,773	4,830	4,690	4,646	-3.5
Female	4,262	4,581	5,060	5,767	5,725	5,268	23.6
Total Minority	1,691	1,785	1,949	2,059	2,085	2,243	33
Male	827	829	885	939	939	1,007	21.8
Female	864	956	1,064	1,121	1,146	1,237	43.2
Black, non-Hispanic	1,033	1,054	1,107	1,101	1,076	1,081	5
Male	470	453	464	458	437	436	-7.2
Female	563	601	643	644	639	645	14.6
Hispanic	384	417	472	519	535	624	63
Male	210	213	232	252	254	292	39
Female	174	205	240	267	281	332	90.8
Asian or Pacific Islander	198	235	286	351	390	448	126
Male	108	126	151	189	210	239	121
Female	89	109	135	162	180	209	135
American Indian/ Alaskan Native	76	78	84	88	84	90	18
Male	39	37	38	40	38	40	2.6
Female	38	41	46	48	46	51	34.2
Nonresident Alien	219	253	305	331	335	344	57
Male	154	180	211	230	231	232	50.6
Female	65	73	94	101	104	111	70.8
Total Enrollment	10,986	11,231	12,087	12,387	12,235	12,501	14
Male	5,794	5,621	5,868	5,999	5,859	5,885	1.6
Female	5,191	5,609	6,219	6,389	6,376	6,615	27.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Higher Education, (various years)."

Table A.6

ENROLLMENT IN 4-YEAR AND 2-YEAR IHEs BY RACE/ETHNICITY: BIENNIALLY, FALL, 1976 TO 1986

(in thousands)

Type of Institution and Race/Ethnicity of Student	1976	1978	1980	1982	1984	1986	1976-1986 % Increase
Four-year Colleges and Universities							
Total	7,107	7,203	7,565	7,648	7,708	7,826	10
White, non-Hispanic	5,999	6,027	6,275	6,306	6,301	6,340	6
Total Minority	931	975	1,050	1,073	1,124	1,195	28
Black, non-Hispanic	604	612	634	612	617	615	2
Hispanic	174	190	217	229	246	278	60
Asian or Pacific Islander	119	138	162	193	223	262	120
American Indian/ Alaskan Native	35	35	37	39	38	40	14
Nonresident Alien	177	201	241	270	282	291	64
Two-year Institutions and Universities							
Total	3,879	4,028	4,521	4,740	4,527	4,675	21
White, non-Hispanic	3,077	3,167	3,556	3,692	3,514	3,575	16
Total Minority	760	810	899	987	961	1,047	38
Black, non-Hispanic	429	443	472	489	459	466	9
Hispanic	210	227	255	291	289	345	64
Asian or Pacific Islander	79	97	124	158	167	186	135
American Indian/ Alaskan Native	41	43	47	49	46	51	24
Nonresident Alien	42	52	64	61	53	53	26
Total	10,986	11,231	12,087	12,388	12,235	12,501	14

SOURCE: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey (1976-1984) and Integrated Postsecondary Education Data System (1986).

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TABLE A.7

Distribution of College Students by Type of College, Sex and Race/Ethnicity: 1976 and 1986

	1976		1986	
	NUMBER	PERCENT	NUMBER	PERCENT
WHITE, non-Hispanic				
Public, 4-Year	4,131,222	45.3%	4,273,827	43.1%
Male	2,195,491	45.4%	2,064,048	44.4%
Female	1,935,731	45.3%	2,209,779	41.9%
Public, 2-Year	2,978,043	32.7%	3,375,997	34.1%
Male	1,527,612	31.6%	1,467,930	31.6%
Female	1,450,431	33.9%	1,908,067	36.2%
Private, 4-Year	1,896,699	20.8%	2,065,766	20.8%
Male	1,062,949	22.0%	1,016,390	21.9%
Female	833,750	19.5%	1,049,376	19.9%
Private, 2-Year	103,700	1.2%	198,593	2.0%
Male	47,853	1.0%	98,118	2.1%
Female	55,847	1.3%	100,475	1.9%
Total	9,109,664	100.0%	9,914,183	100.0%
Male	4,833,905	53.1%	4,646,486	46.9%
Female	4,275,759	46.9%	5,267,697	53.1%
BLACK, non-Hispanic				
Public, 4-Year	423,407	40.9%	424,233	39.2%
Male	183,924	39.1%	171,196	39.3%
Female	239,483	42.4%	253,037	39.2%
Public, 2-Year	409,459	39.6%	430,311	39.8%
Male	192,109	40.8%	171,038	39.2%
Female	217,350	38.5%	259,273	40.2%
Private, 4-Year	181,980	17.6%	191,016	17.7%
Male	85,320	18.1%	80,483	18.5%
Female	96,660	17.1%	110,533	17.1%
Private, 2-Year	19,834	1.9%	35,339	3.3%
Male	9,172	1.9%	13,111	3.0%
Female	10,662	1.9%	22,228	3.4%
Total	1,034,680	100.0%	1,080,899	100.0%
Male	470,525	45.5%	435,828	40.3%
Female	564,155	54.5%	645,071	59.7%
HISPANIC				
Public, 4-Year	167,446	34.9%	206,918	33.2%
Male	88,074	34.9%	98,306	33.7%
Female	79,372	34.9%	108,612	32.8%
Public, 2-Year	220,415	45.9%	332,480	53.3%
Male	118,809	47.1%	153,895	52.7%
Female	101,606	44.7%	178,585	53.9%
Private, 4-Year	70,716	14.7%	71,573	11.5%
Male	36,609	14.5%	34,410	11.8%
Female	34,107	15.0%	37,163	11.2%
Private, 2-Year	21,220	4.4%	12,620	2.0%
Male	8,943	3.5%	5,442	1.9%
Female	12,277	5.4%	7,178	2.2%

(cont'd on next page)

TABLE A.7 cont'd
Distribution of College Students by Type of College, Sex and Race/Ethnicity: 1976 and 1986

	1976		1986	
	NUMBER	PERCENT	NUMBER	PERCENT
HISPANIC cont'd				
Total	479,797	100.0%	623,591	100.0%
Male	252,435	52.6%	292,053	46.8%
Female	227,362	47.4%	331,538	53.2%
ASIAN OR PACIFIC ISLANDER				
Public, 4-Year	89,579	44.5%	189,460	42.3%
Male	48,180	43.8%	101,925	42.6%
Female	41,399	45.4%	87,535	41.9%
Public, 2-Year	79,427	39.5%	182,761	40.8%
Male	42,860	38.9%	95,272	39.8%
Female	36,567	40.1%	87,489	41.9%
Private, 4-Year	31,229	15.5%	72,651	16.2%
Male	18,507	16.8%	40,027	16.7%
Female	12,722	14.0%	32,624	15.6%
Private, 2-Year	933	0.5%	3,350	0.7%
Male	504	0.5%	2,029	0.8%
Female	429	0.5%	1,321	0.6%
Total	201,168	100.0%	448,222	100.0%
Male	110,051	54.7%	239,253	53.4%
Female	91,117	45.3%	208,969	46.6%
AMERICAN INDIAN/ALASKAN NATIVE				
Public, 4-Year	28,445	37.2%	31,902	35.4%
Male	14,580	37.7%	14,246	36.0%
Female	13,865	36.7%	17,656	34.9%
Public, 2-Year	39,312	57.5%	47,488	52.7%
Male	19,745	51.1%	20,214	51.1%
Female	19,567	51.9%	27,274	53.9%
Private, 4-Year	6,765	8.9%	7,610	8.4%
Male	3,734	9.7%	3,509	8.9%
Female	3,031	8.0%	4,101	8.1%
Private, 2-Year	1,845	2.4%	3,133	3.5%
Male	573	1.5%	1,575	4.0%
Female	1,272	3.4%	1,558	3.1%
Total	76,367	100.0%	90,133	100.0%
Male	38,632	50.6%	39,544	43.9%
Female	37,735	49.4%	50,589	56.1%

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall Enrollment Surveys, 1976 and 1986.

Table A.8

Persons 25 to 34 Years Old Completing 4 or More Years of College by Race/Ethnicity: March 1964 to 1987

	White			Black			Hispanic		
Year	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent
1987	35,888	9,003	25.1%	5,196	640	12.3%	3,613	353	9.8%
1986	35,574	8,924	25.1	5,101	696	13.6	3,476	343	9.9
1985	34,675	8,591	24.8	4,906	674	13.7	3,090	323	10.5
1984	34,211	8,726	25.5	4,805	629	13.1	2,745	276	10.1
1983	33,514	8,533	25.5	4,621	628	13.6	2,608	266	10.2
1982	33,131	8,265	24.9	4,440	558	12.6	2,609	252	9.7
1981	32,456	7,903	24.3	4,288	502	11.7	2,397	211	8.8
1980[*]	31,435	7,969	25.4	4,097	508	12.4	2,227	198	8.9
1979	29,573	7,350	24.9	3,644	466	12.8	1,926	151	7.8
1978	28,832	7,151	24.8	3,517	400	11.4	1,899	168	8.8
1977	28,172	7,031	25.0	3,400	389	11.4	1,707	118	6.9
1976	27,291	6,406	23.5	3,196	362	11.3	1,628	120	7.4
1975	26,373	5,853	22.2	3,096	331	10.7	1,564	110	7.0
1974	25,426	5,354	21.0	2,999	243	8.1	1,542	98	6.4
1973	24,428	4,648	19.0	2,878	239	8.3			
1972	23,434	4,401	18.8	2,748	216	7.9			
1971	22,473	3,867	17.2	2,731	173	6.3			
1970	21,887	3,633	16.6	2,651	161	6.1			
1969	21,239	3,441	16.2	2,548	167	6.6			
1968	20,531	3,192	15.5	2,465	137	5.6			
1967	19,696	2,959	15.0	2,425	136	5.6			
1966	19,389	2,826	14.6	2,402	136	5.7			
1965	19,354	2,654	13.7	2,375	162	6.8			
1964	19,346	2,653	13.7	2,406	119	4.9			

Data are not available before 1974.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "Educational Attainment in the United States: March (Various Years)."

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[*] 1980 Census-based.

Table A.9

Persons 25 to 34 Years Old Completing 4 or More Years of College by Sex and Race/Ethnicity: March 1964 to 1987

	Male			Female		
Year	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent
White						
1987	18,017	4,714	26.2%	17,871	4,290	24.0%
1986	17,907	4,715	26.3	17,666	4,209	23.8
1985	17,337	4,542	26.2	17,340	4,051	23.4
1984	17,161	4,663	27.2	17,050	4,065	23.8
1983	16,789	4,698	28.0	16,727	3,836	22.9
1982	16,516	4,598	27.8	16,616	3,668	22.1
1981	16,169	4,432	27.4	16,287	3,470	21.3
1980[*]	15,667	4,534	28.9	15,768	3,435	21.8
1979	14,712	4,281	29.1	14,861	3,068	20.6
1978	14,334	4,150	29.0	14,498	3,002	20.7
1977	14,011	4,076	29.1	14,161	2,953	20.9
1976	13,568	3,787	27.9	13,723	2,620	19.1
1975	13,103	3,453	26.4	13,270	2,401	18.1
1974	12,109	3,138	25.9	12,319	2,206	17.9
1973	12,622	2,738	21.7	12,804	1,908	14.9
1972	11,646	2,636	22.6	11,788	1,764	15.0
1971	11,149	2,352	21.1	11,324	1,514	13.4
1970	10,826	2,267	20.9	11,061	1,366	12.3
1969	10,467	2,111	20.2	10,772	1,331	12.4
1968	10,104	2,016	20.0	10,427	1,176	11.3
1967	9,623	1,867	19.4	10,073	1,091	10.8
1966	9,489	1,797	18.9	9,900	1,029	10.4
1965	9,492	1,700	17.9	9,861	1,903	19.3
1964	9,497	1,700	17.9	9,850	954	9.7
Black						
1987	2,393	289	12.1	2,803	352	12.6
1986	2,355	308	13.1	2,746	388	14.1
1985	2,232	302	13.5	2,675	372	13.9
1984	2,202	291	13.2	2,603	338	13.0
1983	2,103	300	14.3	2,517	328	13.0
1982	2,008	263	13.1	2,432	294	12.1
1981	1,939	241	12.4	2,348	261	11.1
1980[*]	1,856	228	12.3	2,241	280	12.5
1979	1,607	221	13.8	2,037	244	12.0
1978	1,565	184	11.8	1,951	217	11.1
1977	1,519	181	11.9	1,880	207	11.0
1976	1,397	162	11.6	1,799	200	11.1
1975	1,372	164	12.0	1,724	168	9.7
1974	1,299	118	9.1	1,580	126	8.0
1973	1,342	104	7.7	1,657	134	8.1
1972	1,228	100	8.1	1,519	115	7.6
1971	1,281	82	6.4	1,450	90	6.2
1970	1,244	72	5.8	1,406	90	6.4
1969	1,184	90	7.6	1,346	77	5.7
1968	1,133	61	5.4	1,333	77	5.8
1967	1,124	54	4.8	1,302	82	6.3
1966	1,104	57	5.2	1,298	79	6.1
1965	1,072	79	7.4	1,303	85	6.5
1964	1,103	72	6.5	1,303	47	3.6

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[*] 1980 Census-based.

Table A.9 (Continued)

Persons 25 to 34 Years Old Completing 4 or More Years of College by Sex and Race/Ethnicity: March 1964 to 1987

	Male			Female		
Year	All 25-34 Year Olds	Number with 4 or More Yrs. of College	Percent	All 24-34 Year Olds	Number with 4 or More Yrs. of College	Percent
Hispanic						
1987	1,859	186	10.0%	1,754	167	9.5%
1986	1,793	181	10.1	1,683	161	9.6
1985	1,533	166	10.8	1,557	157	10.1
1984	1,316	126	9.6	1,430	149	10.4
1983	1,266	131	10.3	1,343	136	10.1
1982	1,229	130	10.6	1,380	121	8.8
1981	1,150	119	10.3	1,247	92	7.4
1980[*]	1,088	117	10.8	1,139	81	7.1
1979	917	86	9.4	1,009	66	6.5
1978	885	88	9.9	1,016	80	7.9
1977	805	69	8.6	901	50	5.5
1976	743	80	10.8	885	40	4.5
1975	740	66	8.9	824	48	5.8
1974	742	63	8.5	800	36	4.5

Data are not available before 1974.

Source: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "Educational Attainment in the United States: March (Various Years)."

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[*] 1980 Cemsus-based.

Table A.10

Bachelor's Degrees Conferred by IHEs by Sex and Race/Ethnicity: 1976-77 to 1986-87

	1976-77	1978-79	1980-81	1984-85	1986-87	% Changes 1976-77 to 1986-87
Total, All Institutions	917,900	919,540	934,800	968,311	991,260	8.0
Male	494,424	476,056	469,625	476,148	480,780	-2.8
Female	423,476	443,475	465,175	492,163	510,480	20.5
White, non-Hispanic	807,688	802,542	807,319	826,106	841,820	4.2
Male	438,161	418,215	406,173	405,085	406,751	-7.2
Female	369,527	384,327	401,146	421,021	435,069	17.7
Total Minority	94,498	99,159	104,892	112,988	120,134	27.1
Male	44,907	45,074	47,128	50,972	54,431	21.2
Female	49,591	54,085	57,764	62,016	65,703	32.5
Black, non-Hispanic	58,636	60,246	60,673	57,473	56,555	-3.5
Male	25,147	24,659	24,511	23,018	22,499	-10.5
Female	33,489	35,587	36,162	34,455	34,056	1.7
Hispanic	18,743	20,096	21,832	25,874	26,990	44.0
Male	10,318	10,418	10,810	12,402	12,864	24.7
Female	8,425	9,678	11,022	13,472	14,126	67.7
Asian or Pacific Islander	13,793	15,407	18,794	25,395	32,618	136.5
Male	7,638	8,261	10,107	13,554	17,249	125.8
Female	6,155	7,146	8,687	11,841	15,349	149.7
American Indian/ Alaskan Native	3,326	3,410	3,593	4,246	3,971	19.4
Male	1,804	1,736	1,700	1,998	1,819	0.8
Female	1,522	1,674	1,893	2,248	2,152	41.4
Nonresident Alien	15,714	17,839	22,589	29,217	29,306	86.5
Male	11,356	12,776	16,324	20,091	19,598	72.6
Female	4,358	5,063	6,265	9,126	9,708	122.8

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Survey.

Table A.11

Enrollment by Level of Study and Race/Ethnicity:
Fall 1976, 1980, and 1986
(Percent of Total)

	Undergraduate			Graduate			Professional		
	1976	1980	1986	1976	1980	1986	1976	1980	1986
White, non-Hispanic	82.2%	81.0%	79.3%	84.2%	82.4%	78.9%	90.1%	89.5%	85.3%
Total Minority	16.3	17.0	18.8	9.8	10.0	11.6	8.6	9.5	13.2
Black, non-Hispanic	10.0	9.7	9.2	5.9	5.3	5.0	4.6	4.6	5.2
Hispanic	3.7	4.1	5.2	1.8	2.2	3.2	1.9	2.4	3.4
Asian or Pacific Islander	1.8	2.4	3.6	1.7	2.2	3.0	1.7	2.2	4.2
American Indian/ Alaskan Native	0.7	0.7	0.8	0.4	0.4	0.4	0.5	0.3	0.4
Nonresident Alien	1.5	2.0	1.9	6.0	7.5	9.5	1.3	1.0	1.5
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: U.S. Department of Education, National Center for Education Statistics. Integrated Postsecondary Education Data System.

Table A.12

Total Enrollment in IHEs by Level of Study and Race/Ethnicity: 1976 to 1986
(in thousands)

	1976	1978	1980	1982	1984	1986	1976-1986
Graduate Enrollment							
TOTAL	1,222	1,219	1,249	1,233	1,344	1,432	17.4
White, non-Hispanic	1,030	1,019	1,030	1,002	1,087	1,130	9.9
Total Minority	119	120	125	123	141	166	39.5
Black, non-Hispanic	72	68	66	61	67	72	0.0
Hispanic	22	24	27	27	32	46	109.1
Asian or Pacific Islander	21	24	28	30	37	43	104.8
American Indian/ Alaskan Native	4	4	4	5	5	5	25.0
Nonresident Alien	73	80	94	108	115	136	86.3
First-Professional Enrollment							
TOTAL	244	255	277	278	278	270	10.7
White, non-Hispanic	220	229	248	246	243	230	4.5
Total Minority	21	22	26	29	32	36	71.4
Black, non-Hispanic	11	11	13	13	13	14	27.3
Hispanic	5	5	7	7	8	9	80.0
Asian or Pacific Islander	4	5	6	8	9	11	175.0
American Indian/ Alaskan Native	1	1	1	1	1	1	0.0
Nonresident Alien	3	3	3	3	3	4	33.3

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey (1976-1984) and Integrated Postsecondary Education Data System (1986).

Table A.13

Master's Degrees Conferred by Sex and Race/Ethnicity: 1976-77 to 1986-87

	1976-77	1978-79	1980-81	1984-85	1986-87	% Changes 1976-77 to 1986-87
Total, All Institutions	316,602	300,255	294,183	280,421	289,341	-8.6
Male	167,396	152,637	145,666	139,417	141,264	-15.6
Female	149,206	147,618	148,517	141,004	148,077	-0.8
White, non-Hispanic	266,061	249,360	241,216	223,628	228,870	-14.0
Male	139,210	124,058	115,562	106,059	105,573	-24.2
Female	126,851	125,302	125,654	117,569	123,297	-2.8
Total Minority	33,197	31,468	30,910	29,841	30,573	-7.9
Male	14,693	13,676	13,517	13,684	14,236	-3.1
Female	18,504	17,792	17,393	16,157	16,337	-11.7
Black, non-Hispanic	21,037	19,418	17,133	13,939	13,867	-34.1
Male	7,781	7,070	6,158	5,200	5,151	-33.8
Female	13,256	12,348	10,975	8,739	8,716	-34.2
Hispanic	6,071	5,555	6,461	6,864	7,044	16.0
Male	3,268	2,786	3,085	3,059	3,330	1.9
Female	2,803	2,769	3,376	3,805	3,714	32.5
Asian or Pacific Islander	5,122	5,496	6,282	7,782	8,558	67.1
Male	3,123	3,325	3,773	4,842	5,238	67.1
Female	1,999	2,171	2,509	2,940	3,320	66.1
American Indian/ Alaskan Native	967	999	1,034	1,256	1,104	14.2
Male	521	495	501	583	517	-0.8
Female	446	504	533	673	587	31.6
Nonresident Alien	17,344	19,427	22,057	26,952	29,898	72.4
Male	13,493	14,903	16,587	19,674	21,455	59.0
Female	3,851	4,524	5,470	7,278	8,443	119.2

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

Table A.14

Doctoral Degrees Conferred by IHEs by Sex and Race/Ethnicity: 1976-77 to 1986-87
(U.S. Department of Education data)

	1976-77	1978-79	1980-81	1984-85	1986-87	% Changes 1976-77 to 1986-87
Total, All Institutions	33,126	32,675	32,839	32,307	34,033	2.7
Male	25,036	23,488	22,595	21,296	22,059	-11.9
Female	8,090	9,187	10,244	11,011	11,974	48.0
White, non-Hispanic	26,851	26,138	25,908	23,934	24,435	-9.0
Male	20,032	18,433	17,310	15,017	14,813	-26.1
Female	6,819	7,705	8,598	8,917	9,822	44.0
Total Minority	2,528	2,622	2,728	3,056	3,011	19.1
Male	1,756	1,743	1,721	1,858	1,780	1.4
Female	772	879	1,007	1,198	1,231	59.5
Black, non-Hispanic	1,253	1,268	1,265	1,154	1,060	-15.4
Male	766	734	694	561	488	-36.3
Female	487	534	571	593	572	17.5
Hispanic	522	439	456	677	750	43.7
Male	383	294	277	431	439	14.6
Female	139	145	179	246	311	123.7
Asian or Pacific Islander	658	811	877	1,106	1,097	66.7
Male	540	646	655	802	795	47.2
Female	118	165	222	304	302	155.9
American Indian/ Alaskan Native	95	104	130	119	104	9.5
Male	67	69	95	64	58	-13.4
Female	28	35	35	55	46	64.3
Nonresident Alien	3,747	3,915	4,203	5,317	6,587	75.8
Male	3,248	3,312	3,564	4,421	5,466	68.3
Female	499	603	639	896	1,121	124.6

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

Table 15

Doctoral Degrees Conferred by IHEs By Sex and Race/Ethnicity:
1976-77 to 1985-86
(NRC Data)

	1976-77	1978-79	1980-81	1985-86	% Changes 1976-77 to 1984-85
Total, all institutions	25,008	23,947	24,006	22,551	-9.8
Male	18,299	16,487	15,603	13,282	-27.4
Female	6,709	7,460	8,403	9,269	38.2
White, non-Hispanic	23,065	21,920	21,979	20,538	-11.0
Male	17,011	15,261	14,458	12,257	-27.9
Female	6,054	6,659	7,521	8,281	36.8
Total Minority	1,943	2,027	2,027	2,013	3.6
Male	1,288	1,226	1,145	1,025	-20.4
Female	655	801	882	988	50.8
Black, non-Hispanic	1,116	1,056	1,013	820	-26.5
Male	684	551	499	321	-53.1
Female	432	505	514	499	15.5
Hispanic	423	462	464	567	34.0
Male	310	308	275	299	-3.5
Female	113	154	189	268	137.2
Asian or Pacific Islander	339	428	465	527	55.5
Male	251	311	315	347	38.2
Female	88	117	150	180	104.5
American Indian/ Alaskan Native	65	81	85	99	52.3
Male	43	56	56	58	34.9
Female	22	25	29	41	86.4

NOTE: Totals reflect U.S. citizens only.

SOURCE: National Research Council, Office of Scientific and Engineering Personnel, Survey of Earned Doctorates, 1975-1986.

Table A.16

First-Professional Degrees Conferred by IHEs by Race/Ethnicity: 1976-77 to 1986-87

	Total	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-Resident Alien
Total	63,953	58,422	2,537	1,076	1,021	196	701
Dentistry	5,138	4,649	204	70	118	16	81
Medicine	13,461	12,075	710	231	265	30	150
Law	34,104	31.411	1,349	672	392	122	158
1978-78							
Total	68,611	62,430	2,836	1,283	1,205	216	641
Dentistry	5,434	4,901	180	85	194	23	51
Medicine	14,786	13,205	762	324	369	38	88
Law	35,206	32,334	1,500	728	390	121	133
1980-81							
Total	71,340	64,551	2,931	1,541	1,456	192	669
Dentistry	5,460	4,896	195	86	204	10	69
Medicine	15,505	13,723	769	395	446	51	121
Law	36,331	33,109	1,576	899	530	101	116
1984-85							
Total	71,057	63,219	3,029	1,884	1,816	248	861
Dentistry	4,732	4,028	177	123	289	31	84
Medicine	14,972	12,915	730	479	583	89	176
Law	36,048	32,637	1,561	1,019	588	99	144
1986-87							
Total	71,617	62,688	3,420	2,051	2,270	304	884
Dentistry	4,739	3,856	262	169	319	13	120
Medicine	15,429	13,137	786	484	805	66	151
Law	36,056	32,242	1,735	1,054	694	152	179

Percent Changes in First-Professional Degrees Earned by Race/Ethnicity: 1976-77 to 1986-87

Total	12.0	7.3	34.8	90.6	122.3	55.1	26.1
Dentistry	-7.8	-17.1	28.4	141.4	170.3	-18.8	48.1
Medicine	14.6	8.8	10.7	109.5	203.8	120.0	0.7
Law	5.7	2.6	28.6	56.8	77.0	24.6	13.3

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

Table A.17

First-Professional Degrees Conferred by IHEs by Sex and Race/Ethnicity: 1976-77 and 1986-87

	Total	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-Resident Alien
1976-77							
Total	63,953	58,422	2,537	1,076	1,021	196	701
Male	51,980	47,777	1,761	893	776	159	614
Female	11,973	10,645	776	183	245	37	87
Dentistry	5,138	4,649	204	70	118	16	81
Male	4,764	4,345	160	64	107	14	74
Female	374	304	44	6	11	2	7
Medicine	13,461	12,075	710	231	265	30	150
Male	10,891	9,871	469	187	216	25	123
Female	2,570	2,204	241	44	49	5	27
Law	34,104	31,411	1,349	672	392	122	158
Male	26,447	24,503	905	550	263	95	131
Female	7,657	6,908	444	122	129	27	27
1986-87							
Total	71,617	62,688	3,420	2,051	2,270	304	884
Male	46,522	41,149	1,835	1,303	1,420	183	632
Female	25,095	21,539	1,585	748	850	121	252
Dentistry	4,739	3,856	262	169	319	13	120
Male	3,602	3,006	169	120	218	11	78
Female	1,137	850	93	49	101	2	42
Medicine	15,429	13,137	786	484	805	66	151
Male	10,431	9,003	437	319	534	36	102
Female	4,998	4,134	349	165	271	30	49
Law	36,056	32,242	1,735	1,054	694	152	179
Male	21,561	19,528	822	610	393	84	124
Female	14,495	12,714	913	444	301	68	55

Percent Changes in First-Professional Degrees Earned by Sex and Race/Ethnicity: 1976-77 to 1986-87

	Total	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/ Alaskan Native	Non-Resident Alien
Total	12.0	7.3	34.8	90.6	122.3	55.1	26.1
Male	-10.5	-13.9	4.2	45.9	83.0	15.1	2.9
Female	109.6	102.3	104.3	308.7	246.9	227.0	189.7
Dentistry	-7.8	-17.1	28.4	141.4	170.3	-18.8	48.1
Male	-24.4	-30.8	5.6	87.5	103.7	-21.4	5.4
Female	204.0	179.6	111.4	716.7	818.2	0.0	500.0
Medicine	14.6	8.8	10.7	109.5	203.8	120.0	0.7
Male	-4.2	-8.8	-6.8	70.6	147.2	44.0	-17.1
Female	94.5	87.6	44.8	275.0	453.1	500.0	81.5
Law	5.7	2.6	28.6	56.8	77.0	24.6	13.3
Male	-18.5	-20.3	-9.2	10.9	49.4	-11.6	-5.3
Female	89.3	84.0	105.6	263.9	133.3	151.9	103.7

Source: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

Table 18

Total Bachelor's By Broad Field* and Race/Ethnicity: 1976, 1978, and 1984

	Black		American Indian		Asian American		Hispanic		White	
	N	%	N	%	N	%	N	%	N	%
Business										
1976	13,583	23.1	635	19.1	2,991	21.5	5,543	20.5	164,018	20.3
1978	15,956	26.5	723	21.2	3,608	38.5	7,350	22.4	182,706	27.4
1984	15,764	30.6	925	24.9	5,067	21.6	6,250	25.3	194,786	25.5
Education										
1976	13,997	23.8	765	23.1	1,314	9.5	4,962	18.4	140,763	17.4
1978	12,733	21.1	724	21.3	1,216	7.8	5,089	17.1	125,205	15.6
1984	6,151	11.9	527	14.2	1,072	4.6	3,174	12.8	88,267	11.5
Humanities										
1976	6,183	10.5	416	12.5	1,719	12.4	4,255	15.7	122,109	15.1
1978	6,711	11.1	390	11.4	1,740	11.2	3,644	12.3	116,422	14.5
1984	6,961	13.5	513	13.8	2,336	9.9	3,474	14.0	116,431	15.2
Sci/Tech										
1976	9,350	15.9	708	21.3	4,880	35.0	5,643	20.8	209,007	25.9
1978	10,179	16.9	743	21.8	5,986	38.5	6,643	22.4	219,886	27.4
1984	11,996	28.3	987	26.6	11,533	48.1	6,659	26.9	231,229	30.2
Soc/Beh Sci										
1976	13,581	23.1	641	19.3	2,471	17.7	5,541	20.5	141,685	17.5
1978	12,268	20.4	675	19.8	2,408	15.5	5,649	19.0	129,165	16.1
1984	8,314	15.8	579	15.6	2,721	11.6	4,116	16.6	107,121	14.0

* Excludes field in interdisciplinary studies.

SOURCE: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

FROM: Brown. Minorities in the Graduate Pipeline. Educational Testing Service, 1987.

Table 19

Total Master's By Broad Field* and Race/Ethnicity:
1976, 1978, and 1984

	Black		Asian American		Hispanic		White	
	N	%	N	%	N	%	N	%
Business								
1976	3,501	16.7	1,213	28.7	1,427	20.3	55,745	21.0
1978	4,186	21.6	1,546	28.1	1,450	22.5	58,112	23.4
1984	3,672	28.6	2,090	29.4	1,604	25.3	62,525	29.8
Education								
1976	12,810	61.0	1,057	20.6	3,000	40.6	109,184	41.2
1978	10,950	56.5	1,014	18.5	2,837	44.0	96,163	38.7
1984	5,651	44.1	791	11.1	2,443	38.6	62,786	29.9
Humanities								
1976	1,422	6.8	648	12.6	840	11.9	32,489	12.3
1978	1,167	6.0	317	9.4	717	11.1	28,715	11.6
1984	875	6.8	579	8.1	655	10.1	23,504	11.2
Sci/Tech								
1976	1,613	7.7	1,766	34.5	995	14.1	43,952	16.6
1978	1,682	8.7	2,039	37.1	914	14.2	43,942	17.7
1984	1,700	13.3	3,199	44.4	1,057	16.7	44,306	21.1
Soc/Beh Sci								
1976	1,475	7.0	370	7.2	690	9.8	19,565	7.4
1978	1,224	6.3	323	5.9	467	7.2	17,196	6.9
1984	805	6.3	411	5.8	490	7.7	13,752	6.6

* Excludes field in interdisciplinary studies.

SOURCE: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

FROM: Brown. Minorities in The Graduate Education Pipeline. Educational Testing Service, 1987.

Table 20

Total Doctorates by Broad Field* and Race/Ethnicity: 1976, 1978, and 1984

	Black		Asian American		Hispanic		White	
	N	%	N	%	N	%	N	%
Year/Field:								
Business								
1976	35	2.8	17	2.6	16	3.0	946	3.5
1978	49	3.9	22	2.8	6	1.3	952	3.6
1984	45	4.3	42	4.2	12	1.9	834	3.7
Education								
1976	691	55.2	80	12.2	164	30.7	6,753	25.2
1978	634	50.1	101	12.8	136	30.1	6,531	25.0
1984	500	47.3	78	7.8	158	25.6	5,575	24.5
Humanities								
1976	126	10.1	50	7.6	94	17.6	4,432	16.5
1978	149	11.8	64	8.1	88	19.5	4,232	16.2
1984	131	12.4	96	9.5	89	14.4	3,389	14.9
Sci/Tech								
1976	164	13.1	409	62.5	139	26.0	8,878	33.1
1978	176	13.9	517	65.3	107	23.7	8,777	33.6
1984	179	16.9	691	68.6	240	39.0	8,478	37.3
Soc/Beh Sci								
1976	222	17.7	98	15.0	117	21.9	5,561	20.7
1978	243	19.2	88	11.1	103	22.8	5,058	19.4
1984	196	18.5	101	10.0	109	17.7	4,246	18.7

* Excludes field in interdisciplinary studies.

SOURCE: U.S. Department of Education, National Center for Education Statistics. Higher Education General Information Survey.

FROM: Brown. Minorities in The Graduate Education Pipeline. Educational Testing Service, 1987.

Table 21

Number of 2-Year IHEs and Enrollment By Control: 1954 - 1983

	Number			Enrollment		
Year	**Public**	**Private**	**Total**	**Public**	**Private**	**Total**
1954	277	197	474	241,145	41,288	282,4
1955	275	192	467	265,326	43,085	308,411
1956	278	204	482	297,621	49,724	347,345
1957	283	207	490	315,990	53,008	368,9
1958	290	205	495	330,881	54,555	385,436
1959	310	198	508	335,967	53,228	409,195
1960	315	206	521	392,310	59,023	451,3
1961	329	195	524	456,381	61,544	517,9
1962	349	212	561	519,257	70,272	589,529
1963*	375	259	634	735,029	109,483	844,51
1964	406	248	654	874,779	114,147	988,9
1965	420	259	679	1,041,264	131,688	1,172,952
1966	477	275	752	1,189,169	136,801	1,325,970
1967	518	275	793	1,372,053	140,709	1,512,7
1968	594	271	865	1,646,474	145,822	1,792,2
1969	636	252	888	1,846,724	129,934	1,976,658
1970	654	238	892	2,101,972	121,236	2,223,2
1971	697	237	934	2,365,867	120,044	2,485,9
1972	866	238	1,104	2,640,939	115,247	2,756,186
1973	891	249	1,140	2,889,621	120,428	3,010,049
1974	897	242	1,139	3,285,482	118,512	3,403,9
1975	897	231	1,128	3,836,366	133,753	3,970,1
1976	904	227	1,131	3,751,786	131,535	3,883,321
1977	920	235	1,155	3,901,769	141,173	4,042,9
1978	922	268	1,190	3,873,690	154,451	4,028,1
1979	925	268	1,193	4,056,810	159,856	4,216,666
1980	941	328	1,269	4,328,782	197,505	4,526,287
1981	940	334	1,274	4,480,708	235,503	4,716,2
1982	921	353	1,274	4,519,653	252,053	4,771,706
1983	915	355	1,270	4,459,330	264,136	4,723,466

* Beginning in 1963, data for two-year branch campuses of four-year systems are included.

SOURCE: U.S. Department of Education, National Center for Education Statisti
Fall Enrollment Surveys.

Table A.22

Enrollment in HBCUs by Type and Control: 1954-1987

Year	No. of HBCUs	Total Enrollment	Two-Year Institutions		Four-Year Institutions	
			Public	Private	Public	Private
1987	99	211,867	6,442	1,538	146,412	57,475
1985	99	213,776	6,050	1,323	146,111	60,292
1984	99	216,050	5,857	2,094	147,294	60,805
1983	100	221,962	6,643	2,161	151,670	61,488
1982	100	216,572	6,950	1,782	147,701	60,139
1981	102	221,076	5,797	2,273	150,419	62,587
1980	102	222,218	5,603	2,430	151,762	62,423
1979	103	219,150	5,759	2,627	150,073	60,691
1978	104	216,930	5,722	3,149	147,208	60,851
1977	104	215,769	6,550	3,083	142,283	63,853
1976	105	212,118	6,408	3,054	140,158	62,498
1975	105	212,300	7,827	2,772	141,314	60,887
1974	104	191,577	6,550	2,439	125,530	57,058
1973	104	188,318	6,348	2,477	123,843	55,650
1972	103	180,054	5,318	2,397	120,990	56,349
1971	102	179,739	4,629	2,370	116,718	56,022
1970	102	169,752	4,443	2,418	109,386	53,505
1969	102	162,818	3,424	2,311	104,319	52,764
1964	96	121,109	960	1,121	77,822	41,206
1959	94	88,193	480	982	53,798	32,933
1954	95	71,183	195	584	42,040	28,459

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall Enrollment Surveys, various years.

Table A.23

High School Completion for Persons 18 to 19 Years Old and 20 to 24 Years Old by Race/Ethnicity: 1962 to 1988

AGE: 18 to 19

YEAR	TOTAL	WHITE	BLACK	HISPANIC ORIGIN*
1988	71.5	74.0	58.4	52.3
1987	73.6	75.6	63.7	54.8
1986	74.6	76.6	64.9	54.7
1985	74.6	76.7	62.8	49.8
1984	73.3	75.5	63.0	58.3
1983	72.7	75.6	59.1	50.3
1982	72.0	74.5	58.2	51.7
1981	72.5	74.8	59.6	47.2
1980	73.7	76.1	59.3	46.1
1979	72.8	75.3	56.4	53.7
1978	73.5	76.3	54.9	48.9
1977	72.9	75.7	54.9	50.7
1976	73.1	75.4	58.2	50.9
1975	73.7	77.0	52.8	50.0
1974	73.4	76.2	55.8	48.9
1973	73.9	76.7	56.4	42.0
1972	74.8	77.6	57.2	46.3
1971	73.2	76.4	51.7	N/A
1970	73.4	76.6	50.5	N/A
1969	73.7	77.0	51.5	N/A

AGE: 20 to 24

YEAR	TOTAL	WHITE	BLACK	HISPANIC ORIGIN*
1988	85.0	85.5	82.2	56.3
1987	84.3	84.8	81.1	64.1
1986	84.8	85.4	81.0	61.6
1985	85.3	86.0	80.8	67.4
1984	84.6	85.7	79.3	60.7
1983	83.3	84.6	75.8	56.6
1982	84.1	85.4	76.2	60.2
1981	83.7	85.0	75.7	59.3
1980	83.8	85.1	74.3	57.1
1979	83.2	84.9	71.8	55.8
1978	83.7	85.2	73.5	58.7
1977	83.7	85.1	73.4	56.6
1976	83.7	85.4	71.9	58.0
1975	83.9	85.9	70.5	61.3
1974	83.9	85.6	72.5	59.0
1973	83.7	85.4	71.6	51.1
1972	82.0	83.4	71.2	54.1
1971	81.5	83.4	67.4	N/A
1970	81.2	83.5	63.9	N/A
1969	80.2	82.5	64.1	N/A

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* May be of any race.

Sources: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P-20, "School Enrollment--Social and Economic Characteristics of Students: October (Various Years)"; and Current Population Surveys (unpublished tabulations).

Table 24

Results from NAEP Reading Assessments by Race/Ethnicity: 1971, 1975, 1980, and 1984

		1971	1975	1980	1984
AGE 9					
	WHITE	**214.4**	**215.9**	**219.7**	**220.1**
	BLACK	**169.3**	**181.9**	**188.9**	**188.4**
	HISPANIC	**N/A**	**182.9**	**189.1**	**193.0**
AGE 13					
	WHITE	**260.1**	**260.9**	**263.1**	**263.4**
	BLACK	**220.3**	**224.4**	**231.9**	**236.8**
	HISPANIC	**N/A**	**231.1**	**236.0**	**239.2**
AGE 17					
	WHITE	**290.4**	**290.7**	**291.0**	**294.6**
	BLACK	**240.6**	**244.0**	**246.1**	**263.5**
	HISPANIC	**N/A**	**254.7**	**261.7**	**268.7**

FROM: U.S. Department of Education, National Center for Education Statistics. "Condition of Education, 1986."

SOURCE: Educational Testing Service, "The Reading Report Card, 1985."

Table 25

Percent of 17 Year Olds Attaining NAEP Reading Proficiency by Race/Ethnicity: 1971, 1975, 1980, and 1984

	1971	1975	1980	1984
BASIC (200)				
WHITE	98.4	99.1	99.3	99.2
BLACK	83.6	86.0	88.8	96.5
HISPANIC	N/A	92.4	96.5	96.8
INTERMEDIATE (250)				
WHITE	85.4	87.5	88.9	88.9
BLACK	41.1	45.0	45.8	65.8
HISPANIC	N/A	56.5	63.2	69.1
ADEPT (300)				
WHITE	41.4	40.6	39.9	45.1
BLACK	6.9	7.1	6.1	15.5
HISPANIC	N/A	12.9	12.7	19.9
ADVANCED (350)				
WHITE	5.5	4.0	3.6	5.8
BLACK	0.2	0.0	0.0	0.8
HISPANIC	N/A	0.5	0.4	1.5
TOTAL NUMBER	18,417	19,624	18,103	25,193

FROM: U.S. Department of Education, National Center for Education Statistics. "Condition of Education, 1986."

SOURCE: Educational Testing Service, "The Reading Report Card, 1986."

Table 26

AVERAGE SAT SCORES BY RACE/ETHNICITY: 1976-1987

VERBAL SCORES

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1987	Change 1976-1987
American Indian	388	390	387	386	390	391	388	388	390	392	393	+5
Asian American	414	405	401	396	396	397	398	395	398	404	405	-9
Black	332	330	332	330	330	332	341	339	342	346	351	+19
Mexican American	371	370	370	370	372	373	377	375	376	382	379	+8
Puerto Rican	364	355	349	345	350	353	360	358	358	368	360	-4
White	451	448	446	444	442	442	444	443	445	449	447	-4
Other	410	402	399	393	394	388	392	386	388	391	405	-5
All	431	429	429	427	424	424	426	425	426	431	430	-1

MATHEMATICS SCORES

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1987	Change 1976-1987
American Indian	420	421	419	421	425	425	424	425	427	428	432	+12
Asian American	518	514	510	511	513	513	513	514	519	518	521	+3
Black	354	357	354	358	362	362	366	369	373	376	377	+23
Mexican American	410	408	402	410	415	415	416	417	420	426	424	+14
Puerto Rican	401	397	388	388	398	398	403	403	405	409	400	-1
White	493	489	485	483	483	483	483	484	487	490	489	-4
Other	458	457	450	447	449	447	449	446	450	448	455	-3
All	472	470	468	467	466	466	467	468	471	475	476	+4

SOURCE: The College Board. National College Bound Seniors. 1987.

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Table 27

TOTAL STUDENT AID AVAILABLE: 1966 TO 1988
(billions of dollars)

Year	Total Aid Available
1988	18.6874
1987	15.0553
1986	13.7339
1985	13.9705
1984	12.4108
1983	11.2244
1982	10.0556
1981	11.4478
1980	8.8601
1979	6.9340
1978	4.9259
1977	4.4202
1976	4.5393
1975	3.1550
1974	2.4115
1973	2.0781
1972	2.1002
1971	1.4295
1970	1.3449
1969	1.1679
1968	0.8568
1967	0.6277
1966	0.3881

SOURCE: U.S. Department of Education, Office of Planning, Budget and Evaluation, 1988.

Table 28

Mean Individual Earnings For All Men, and For Women Who Work Full-Time, Age 25 to 34, By Education Level: 1973 and 1985

	Mean Earnings (in 1985 dollars)		The College Premium*	
	1973	1985	1973	1985
Men, 25-34				
1-3 yrs. h.s.	$16,810	$13,739	1.57	1.93
4 yrs. h.s.	22,655	18,116	1.17	1.46
1-3 yrs. coll.	22,202	20,704	1.19	1.28
4 yrs. coll.	26,511	26,515	1.00	1.00
4+ yrs. coll.	28,997	27,847	.91	.95
Women, 25-34 (year round, full-time workers only)				
1-3 yrs. h.s.	$11,781	$12,931	1.66	1.63
4 yrs. h.s.	14,265	15,083	1.37	1.39
1-3 yrs. coll.	16,914	17,734	1.15	1.19
4 yrs. coll.	19,512	21,027	1.00	1.00
4+ yrs. coll.	23,328	22,130	.84	.95

* The ratio of mean earnings of similar age and sex individuals with four years of college, to mean earnings of the group in question.

SOURCE: U.S. Department of Commerce, Bureau of the Census. Current Population Survey Public Use Tapes, March 1974 and March 1987; Calculations by Center for Labor Market Studies, Northeastern University.

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APPENDIX B

THE HIGH SCHOOL AND BEYOND SURVEY

THE HIGH SCHOOL AND BEYOND SURVEY

High School and Beyond is a multi-year research effort sponsored by the Longitudinal Studies Branch of the Center for Educational Studies, U.S. Department of Education. The Base Year survey for the study was administered in the spring of 1980, using a sample of approximately 30,000 sophomores (Sophomore Cohort) and 28,000 seniors (Senior Cohort) from over 1,000 public and private schools. The First Follow-up Data Collection was carried out in the spring of 1982. It included virtually the entire Sophomore Cohort, including those who had dropped out of school, and a sample of about 12,000 members of the Senior Cohort. The Second Follow-up data were collected in spring 1984 from about 15,000 members of the Sophomore Cohort and from the 12,000 members of the Senior Cohort who were in the First Follow-up sample. In the spring of 1986, Third Follow-up data were collected from the same sample that participated in the Second Follow-up.

A number of supplementary studies have also been conducted. As part of the base year effort about 7,000 parents, 3,500 from each cohort, were surveyed primarily concerning financial matters. The income information collected from parents was used for this study in cases for which it was available. In addition, postsecondary transcripts were collected for members of the Senior Cohort who reported attending a postsecondary institution at any time. These data were used to determine postsecondary attendance, retention, and credits earned. Finally, a supplementary data set containing economic information about counties in which the students' schools are located was developed and is the source of the data about county unemployment rates and per capita income.
